

UNITED STATES  
ENVIRONMENTAL PROTECTION AGENCY  
REGION 2

In the Matter of the:

STANDARD CHLORINE CHEMICAL Co.  
SUPERFUND SITE

Apogent Transition, Corp.  
Beazer East, Inc.  
Cooper Industries, LLC  
Occidental Chemical Corporation

Respondents.

Proceeding Under Sections 104, 107 and 122  
of the Comprehensive Environmental  
Response, Compensation, and Liability Act, as  
amended, 42 U.S.C. §§ 9604, 9607 and 9622.

U.S. EPA Region 2  
CERCLA Docket No. 02-2013-2015

ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT  
FOR REMEDIAL INVESTIGATION AND FOCUSED FEASIBILITY STUDY

## Table of Contents

I. JURISDICTION AND GENERAL PROVISIONS.....	1
II. PARTIES BOUND .....	1
III. STATEMENT OF PURPOSE.....	2
IV. DEFINITIONS .....	2
V. EPA FINDINGS OF FACT .....	5
VI. EPA CONCLUSIONS OF LAW AND DETERMINATIONS .....	8
VII. SETTLEMENT AGREEMENT AND ORDER.....	9
VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS.....	10
IX. WORK TO BE PERFORMED .....	12
X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS .....	15
XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION .....	16
XII. SITE ACCESS AND INSTITUTIONAL CONTROLS .....	18
XIII. COMPLIANCE WITH OTHER LAWS .....	19
XIV. RETENTION OF RECORDS .....	19
XV. DISPUTE RESOLUTION .....	20
XVI. STIPULATED PENALTIES.....	20
XVII. FORCE MAJEURE .....	23
XVIII. PAYMENT OF RESPONSE COSTS.....	24
XIX. COVENANT NOT TO SUE BY EPA .....	26
XX. RESERVATIONS OF RIGHTS BY EPA.....	27
XXI. COVENANT NOT TO SUE BY RESPONDENTS .....	28
XXII. OTHER CLAIMS .....	28
XXIII. CONTRIBUTION PROTECTION.....	29
XXIV. INDEMNIFICATION .....	29
XXV. INSURANCE.....	30
XXVI. FINANCIAL ASSURANCE.....	30
XXVII. INTEGRATION/APPENDICES .....	32
XXVIII. ADMINISTRATIVE RECORD .....	32
XXIX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION .....	32
XXX. NOTICE OF COMPLETION OF WORK.....	33

**ADMINISTRATIVE SETTLEMENT AGREEMENT AND ORDER ON CONSENT  
FOR REMEDIAL INVESTIGATION AND FOCUSED FEASIBILITY STUDY**

**I. JURISDICTION AND GENERAL PROVISIONS**

1. This Administrative Settlement Agreement and Order on Consent ("Agreement") is entered into voluntarily by the United States Environmental Protection Agency ("EPA") and Apogent Transition, Corp., Beazer East, Inc., Cooper Industries, LLC, and Occidental Chemical Corporation ("Respondents"). The Agreement concerns the preparation and performance of a remedial investigation ("RI") and focused feasibility study ("FFS") at the Standard Chlorine Chemical Co., Inc. Site, located at 1025 through 1035 Belleville Turnpike, Kearny, New Jersey ("Site"), and the reimbursement for future response costs incurred by EPA in connection with the RI/FFS.

2. This Agreement is issued under the authority vested in the President of the United States by Sections 104, 107 and 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9604, 9607 and 9622 ("CERCLA"). This authority was delegated to the Administrator of EPA on January 23, 1987, by Executive Order 12580, 52 Fed. Reg. 2926 (Jan. 29, 1987), and further delegated to Regional Administrators on May 11, 1994 by EPA Delegation Nos. 14-14-C and 14-14-D. This authority was further redelegated on November 23, 2004 by the Regional Administrator of EPA Region 2 to the Director of the Emergency and Remedial Response Division by EPA Region 2 Delegation Nos. 14-14-C and 14-14-D.

3. In accordance with Sections 104(b)(2) and 122(j)(1) of CERCLA, 42 U.S.C. §§ 9604(b)(2) and 9622(j)(1), EPA notified the relevant Federal and State natural resource trustees on April 9, 2010 of negotiations with potentially responsible parties regarding the release of hazardous substances that may have resulted in injury to the natural resources under Federal and/or State trusteeship.

4. EPA and Respondents recognize that this Agreement has been negotiated in good faith as a settlement and that the actions undertaken by Respondents in accordance with this Agreement do not constitute an admission of any liability. Respondents do not admit, and retain the right to controvert in any subsequent proceedings, other than proceedings initiated by the United States to implement or enforce this Agreement, the validity of the findings of fact, conclusions of law and determinations in this Agreement. Respondents agree to comply with and be bound by the terms of this Agreement and further agree that they will not contest the basis or validity of this Agreement or its terms.

**II. PARTIES BOUND**

5. This Agreement applies to and is binding upon EPA and upon Respondents and their successors and assigns. Any change in ownership or corporate status of a Respondent including, but not limited to, any transfer of assets or real or personal property shall not alter such Respondent's

responsibilities under this Agreement.

6. Respondents are jointly and severally liable for carrying out all activities required by this Agreement. In the event of the insolvency or other failure of any one or more Respondents to implement the requirements of this Agreement, the remaining Respondents shall complete all such requirements.

7. Respondents shall ensure that their contractors, subcontractors, and representatives receive a copy of this Agreement and comply with this Agreement. Respondents shall be responsible for any noncompliance with this Agreement.

8. The undersigned representatives of Respondents certify that they are fully authorized to enter into the terms and conditions of this Agreement and to execute and legally bind Respondents to this Agreement.

### **III. STATEMENT OF PURPOSE**

9. In entering into this Agreement, the objectives of EPA and Respondents are: (a) to determine the nature and extent of contamination and any threat to the public health, welfare, or the environment caused by the release or threatened release of hazardous substances, pollutants or contaminants at or from the Site, by conducting a RI as more specifically set forth in the Statement of Work ("SOW") attached as Appendix A to this Agreement; (b) to identify and evaluate remedial alternatives to prevent, mitigate or otherwise respond to or remedy any release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site by conducting a FFS as more specifically set forth in the SOW in Appendix A to this Agreement; and (c) to recover response and oversight costs incurred by EPA with respect to this Agreement.

10. The Work conducted under this Agreement is subject to approval by EPA and shall provide all appropriate and necessary information to assess Site conditions and evaluate alternatives to the extent necessary to select a remedy that will be consistent with CERCLA and the National Oil and Hazardous Substances Pollution Contingency Plan, 40 C.F.R. Part 300 ("NCP"). Respondents shall conduct all Work under this Agreement in compliance with CERCLA, the NCP, and all applicable EPA guidances, policies, and procedures.

### **IV. DEFINITIONS**

11. Unless otherwise expressly provided herein, terms used in this Agreement that are defined in CERCLA or in regulations promulgated under CERCLA shall have the meaning assigned to them in CERCLA or in such regulations. Whenever terms listed below are used in this Agreement or in the appendices attached hereto and incorporated hereunder, the following definitions shall apply:

a. "Agreement" shall mean this Administrative Settlement Agreement and Order on



Consent, the SOW, all appendices attached hereto (listed in Section XXVII) and all documents incorporated by reference into this document including without limitation EPA-approved submissions. EPA-approved submissions (other than progress reports) are incorporated into and become a part of the Agreement upon approval by EPA. In the event of conflict between this Agreement and any appendix or other incorporated documents, this Agreement shall control.

b. "CERCLA" shall mean the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended, 42 U.S.C. §§ 9601, *et seq.*

c. "Day" shall mean a calendar day. In computing any period of time under this Agreement, where the last day would fall on a Saturday, Sunday, or federal holiday, the period shall run until the close of business of the next working day.

d. "Effective Date" shall be the effective date of this Agreement as provided in Section XXIX.

e. "EPA" shall mean the United States Environmental Protection Agency and any successor departments or agencies of the United States.

f. "Engineering Controls" shall mean constructed containment barriers or systems that control one or more of the following: downward migration, infiltration or seepage of surface runoff or rain; or natural leaching migration of contaminants through the subsurface over time. Examples include caps, engineered bottom barriers, immobilization processes, and vertical barriers.

g. "Future Response Costs" shall mean all costs, including, but not limited to, direct and indirect costs, that the United States incurs in reviewing or developing plans, reports and other items pursuant to this Agreement, verifying the Work, or otherwise implementing, overseeing, or enforcing this Agreement, including but not limited to, payroll costs, contractor costs, travel costs, laboratory costs, Agency for Toxic Substances and Disease Registry ("ATSDR") costs, the costs incurred pursuant to Paragraph 64 (costs and attorneys fees and any monies paid to secure access, including the amount of just compensation), Paragraph 50 (Emergency Response and Notification of Releases), and Paragraph 94 (Work Takeover). Future Response Costs shall also include all Interim Response Costs.

h. "Institutional controls" shall mean non-engineered instruments, such as administrative and/or legal controls, that help to minimize the potential for human exposure to contamination and/or protect the integrity of a remedy by limiting land and/or resource use. Examples of institutional controls include easements and covenants, zoning restrictions, special building permit requirements, and well drilling prohibitions.

i. "Interest" shall mean interest at the rate specified for interest on investments of the EPA Hazardous Substance Superfund established by 26 U.S.C. § 9507, compounded annually, in accordance with 42 U.S.C. § 9607(a). The applicable rate of interest shall be the rate in effect at the time the interest accrues. The rate of interest is subject to change on October 1 of each year.

j. "Interim Response Costs" shall mean all costs, including direct and indirect costs, (a) paid by the United States in connection with the Site between November 30, 2009 and the Effective Date, or (b) incurred between November 30, 2009 and the Effective Date, but paid after that date.

k. "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

l. "NJDEP" shall mean the New Jersey Department of Environmental Protection and any successor departments or agencies of the State of New Jersey.

m. "Paragraph" shall mean a portion of this Agreement identified by an Arabic numeral.

n. "Parties" shall mean EPA and Respondents.

o. "RCRA" shall mean the Resource Conservation and Recovery Act, also known as the Solid Waste Disposal Act, as amended, 42 U.S.C. §§ 6901, *et seq.*

p. "Respondents" shall mean Apogent Transition, Corp., Beazer East, Inc., Cooper Industries, LLC, and Occidental Chemical Corporation.

q. "Section" shall mean a portion of this Agreement identified by a Roman numeral.

r. "Site" shall mean the Standard Chlorine Chemical Co., Inc. Superfund Site located at 1025 through 1035 Belleville Turnpike, Town of Kearny, Hudson County, New Jersey on the tax map of the Township of Kearny as Block 287, Lots 48, 49, 50, 51, 52 and 52.01 (the "Property"). The Site occupies approximately 25 acres and is located in an industrial area of Hudson County. The Site is bounded by the former Diamond Shamrock Site to the north, the Hackensack River to the east, the Koppers Company, Inc. Seaboard Site ("Koppers Seaboard Site") to the south, and Belleville Turnpike to the west. In accordance with the NCP, the Site includes the areal extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action to be performed at the Property.

s. "State" shall mean the State of New Jersey.

t. "Statement of Work" or "SOW" shall mean the Statement of Work for development of a RI/FFS for the Site, as set forth in Appendix A to this Agreement. The Statement of Work is incorporated into this Agreement and is an enforceable part of this Agreement as are any modifications made thereto in accordance with this Agreement.

u. "Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any pollutant or contaminant under Section 101(33) of CERCLA, 42 U.S.C. § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA, 42

U.S.C. § 6903(27); and (4) any mixture containing any of the constituents noted in (1), (2), and (3) above.

v. "Work" shall mean all activities Respondents are required to perform under this Agreement, except those required by Section XIV (Retention of Records).

## **V. EPA FINDINGS OF FACT**

12. The Site is located at 1025 through 1035 Belleville Turnpike, Town of Kearny, Hudson County, New Jersey on Block 287, Lots 48, 49, 50, 51, 52 and 52.01. The Site occupies approximately 25 acres and is located in an industrial area of Hudson County. The Site has undergone implementation of certain interim response actions approved by EPA and overseen by NJDEP. The Site is bounded to the east by the Hackensack River, to the west by Belleville Turnpike, to the north by the former Diamond Shamrock Site, and to the south by the Koppers Seaboard Site. Both the Diamond Shamrock and Koppers Seaboard Sites are being addressed under the State of New Jersey's Site Remediation Program, with oversight by NJDEP.

13. Although the Site is zoned for heavy industrial use, it lies in the Hackensack Meadowlands which has been identified by the United States Fish and Wildlife Service as a Significant Habitat Complex of the New York Bight Watershed.

14. On or about October 12, 2010, the Town of Kearny, New Jersey completed a tax foreclosure on Lots 48, 49, 50, 51, 52 and 52.01 and is now the owner of the Site.

15. Standard Chlorine Chemical Company ("Standard Chlorine") is the former owner of Lot 50 of the Site, and its wholly-owned subsidiary Standard Naphthalene formerly owned Lots 48, 49, 51, 52 and 52.01. Beazer, formerly known as Koppers Company, Inc. and Beazer Materials and Services, Inc., previously owned portions of the Site and conducted activities on those portions of the Site that it owned. Occidental Chemical Corporation is a corporate successor to the Diamond Shamrock Chemical Company, which produced chromium ore processing residue ("COPR") at the neighboring Diamond Shamrock Site. According to the 1993 Remedial Investigation Report prepared by Roy F. Weston, COPR was used as fill on roughly 85% of the Site.

16. Operations began at the Site in 1916 and continued until 1993, when all Site activity ceased. In 1916, the White Tar Company began the refinement of crude coal-tar naphthalene on Lots 48 and 49 to produce moth preventatives and other naphthalene products. In 1929, American Tar Products, Inc. acquired the stock of the White Tar Company and continued the White Tar Company's manufacturing activities at the Site. In 1934, the Koppers Gas & Coke Company ("Koppers") – a corporate predecessor of Beazer – acquired the stock of American Tar Products and, in 1935, American Tar Products transferred its assets, including the White Tar Company stock, to Koppers. In 1942, the White Tar Company was liquidated and its assets – including the land and operations on the portions of the Site where White Tar operated – were transferred to Koppers. In 1944, Koppers was merged into Beazer and, in 1946, Beazer acquired Lots 51, 52, and 52.01 from Thomas A. Edison, Inc. Throughout this time, the refinement of naphthalene and production of naphthalene

products continued.

17. In 1962, Standard Naphthalene acquired Lots 48, 49, 51, 52 and 52.01 and the plant from Beazer. Standard Naphthalene processed liquid petroleum naphthalene from 1963 to 1980 on these lots. Standard Naphthalene also leased a processing building (the "Distillation Building") and a number of tanks located on Lot 49 to Standard Chlorine from 1970 to 1980, which Standard Chlorine used for separating and storing 1,2,4-trichlorobenzene. Standard Naphthalene discontinued business operations in 1981.

18. Operations on Lot 50 of the Site began in 1928 with construction of a lead-acid battery manufacturing facility by Thomas A. Edison, Inc. ("Edison"). Edison made batteries at this location until early 1954. In 1954, Crown Rubber Products purchased Lot 50, and from 1954 to 1962, Crown Rubber Products and its corporate successor, Keaton Rubber Products, operated a facility for molded rubber products at Lot 50. From mid-1954 to some point in 1963, The Tanatex Chemical Corporation, through leaseholds that expired in 1964 (unless surrendered or terminated at an earlier time), operated on a portion of Lot 50 for the manufacture of dye carriers. From approximately 1957 to 1962, Keaton Rubber Products leased a portion of Lot 50 to The Tanatex Chemical Corporation. Apogent Transition Corp. is the corporate successor by merger to The Tanatex Chemical Corporation.

19. In 1957, Edison merged with McGraw Electric Company to form McGraw-Edison Company. In 1985, Cooper Industries, Inc. acquired through public tender offer McGraw-Edison Company. In 2004, McGraw Edison Company merged with Cooper Industries, Inc., which then changed its name to Cooper Industries, LLC.

20. In 1962, Standard Chlorine acquired Lot 50 from Keaton Rubber Products. On Lot 50, Standard Chlorine manufactured and packaged dichlorobenzene products, such as moth crystals and flakes, from 1962 to 1981. From 1962 to 1993, also on Lot 50, Cloroben Chemical Corporation, a subsidiary of Standard Chlorine, formulated and packaged drain-cleaner products using raw materials such as orthodichlorobenzene, sulfuric acid, hydrochloric acid, methyl benzoate, terpene solvents, and enzymes. All chemical manufacturing operations on Lot 50 were discontinued in 1993.

21. It is reported in Standard Chlorine's May 1993 Remedial Investigation Report that Standard Chlorine refined mixed dichlorobenzene isomers by continuous fractional crystallization on Lot 50 resulting in the average annual production of an estimated 2.5 million pounds of orthodichlorobenzene during its years of operation. It is also reported that an annual average of 1.5 million pounds of 1,2,4-trichlorobenzene were produced onsite on Lot 49 by Standard Chlorine during its years of operation. An estimated 1,500 pounds per year and 5,000 pounds per year of 1,2,4-trichlorobenzene were released in air emissions and wastewater discharges, respectively.

22. At the time of listing on the National Priorities List ("NPL"), areas of concern at the Site included contaminated soils, two lagoons on the eastern portion of the Site with an approximate surface area of 33,000 square feet and an average depth of 6 feet, and PCB- and lead-contaminated soils and concrete near Building 2 on the western side of the Site. The contaminants at the Site included, but are not limited to, PCBs, chlorinated benzene compounds, naphthalene, chromium

including hexavalent chromium, lead, furans and dioxins, including 2,3,7,8 tetrachlorodibenzo-p-dioxin ("TCDD"). The highest levels of TCDD detected in the lagoon system was 268 micrograms per kilogram ("mg/kg"). TCDD was detected in a sediment sample in the Hackensack River at 96.4 nanograms per kilogram. COPR underlies roughly 85 percent of the Site, according to a Remedial Investigation Report prepared in 1993 by Roy F. Weston as part of an NJDEP-lead cleanup. Data from 1991 revealed maximum total chromium and hexavalent chromium concentrations in the fill of 34,900 mg/kg and 270 mg/kg, respectively. Yellow-colored sediments were evident in the drainage ditch on the southern boundary of the Site. Sampling has identified total chromium concentrations in on-site sediment and surface water as high as 16,400 mg/kg and 1,200 mg per liter, respectively. 1,2,4-trichlorobenzene has been identified at a concentration of 200,000 mg/kg in Site soil, and essentially pure naphthalene has been identified in soil and sediment samples.

23. TCDD is a CERCLA-designated hazardous substance as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14). EPA has classified TCDD as a probable human carcinogen. The most noted health effect in people exposed to large amounts of TCDD is chloracne, a severe skin disease with lesions that occur mainly on the face and upper body. In addition, exposure to Site contaminants such as PCBs, lead, benzene, dichlorobenzenes, chlorobenzene, trichlorobenzenes, naphthalene, and chromium by direct contact, inhalation, or ingestion may cause adverse human health effects.

24. Data from sampling events between 1992 and 2002 show that a release of site-related hazardous substances has occurred to an on-site stream, the southern drainage ditch, the Hackensack River and adjacent wetlands. Prior to completion of the Interim Response Action ("IRA"), surface runoff from contaminated soils at the Site may have drained into the Hackensack River via: (1) a drainage pipe along the northern boundary of the Site; (2) a drainage ditch that runs along the southern boundary of the Site; and (3) overland runoff that flows directly from the Site to the Hackensack River. In addition, the base of the waste material in the unlined lagoons is in close proximity with the shallow water table, which, prior to completion of the IRA, the shallow water table discharged to the Hackensack River and the southern drainage ditch.

25. Prior to completion of the IRA, persons potentially exposed to contaminants at the Site included on-site workers, workers on neighboring properties, Site visitors, trespassers and recreational users of the Hackensack River. Crabs, fish, and water birds also may have been exposed. Due to dioxin and PCB contamination, originating in part from the Site, the State has issued Fish Consumption Advisories for consumption of certain fish and blue crab for the Hackensack River. However, fishing and crabbing for consumption regularly occurs upstream and downstream from the Site.

26. In October 1989, Standard Chlorine entered into an Administrative Consent Order ("1989 ACO") with the NJDEP to conduct a remedial investigation and perform a remedial action at the Site. In April 1990, the NJDEP entered into a separate Administrative Consent Order (the "1990 ACO") with Respondent Occidental and Chemical Land Holdings, Inc. to address the COPR at 26 sites in New Jersey, one of which is the Site.

27. Since 1984 several interim response measures have been undertaken, work plans prepared, and studies and remedial investigations completed at the Site under NJDEP's authority and oversight. In addition, NJDEP approved a Site-wide IRA, which was implemented by, among others, Standard Chlorine and Respondent Beazer. The IRA includes, among other things, construction of a bulkhead along the Hackensack River, dredging of river sediments adjacent to the bulkhead, excavation and placement in approved consolidation areas of contaminated soils, stream sediments, and other site materials, installation of a slurry wall enclosing the Property, the Diamond Shamrock property to the north and a small area of the Koppers Seaboard property to the south, construction and operation of a hydraulic control system, and dewatering and installation of an interim surface cover over the lagoons. In addition, to accommodate implementation of the interim response measures and to eliminate the need for maintenance obligations under the 2010 AOC referenced in paragraph 30 below, the following buildings were demolished in three separate tracks: (a) Track 1 demolition: Buildings 16, 19 and 20; (b) Track 2 demolition: Buildings 15, 17, 18 and 21; and (c) Track 3 demolition: Buildings 5, 6, 7, 8, 9, 10 and 14.

28. In April 2003, EPA proposed the Site for placement onto the NPL, pursuant to Section 105(a)(8)(B) of CERCLA, 42 U.S.C. §9605(a)(8)(B). See 68 Fed. Reg. 23094. The Site was placed on the NPL in September 2007. See 72 Fed. Reg. 53463.

29. As a result of the Site's NPL status, EPA conducted a removal site evaluation ("RSE") at the Site on April 8, 2008 and documented the findings in an RSE Report issued on January 27, 2009. As set forth in the RSE Report, EPA found that a removal action was warranted at the Site to address the potential for TCDD releases from certain buildings in the eastern portion of the Site, including one building that Standard Chlorine formerly used for processing 1, 2, 4-trichlorobenzene, a substance associated with potential for dioxin contamination.

30: EPA has identified Respondents as potentially responsible parties ("PRPs") for the Site. Pursuant to Administrative Settlement Agreement and Order on Consent ("AOC"), CERCLA 02-2010-2012 ("2010 AOC"), Standard Chlorine and Respondent Beazer agreed to perform certain removal activities to reduce the threat of direct contact with hazardous substances at the Site and minimize the potential for off-site migration. Removal activities pursuant to the 2010 AOC have been completed.

## **VI. EPA CONCLUSIONS OF LAW AND DETERMINATIONS**

Based on the Findings of Fact set forth above, EPA has determined that:

31. The Site is a "facility" as defined in Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).

32. The contamination found at the Site, as identified in Paragraphs 22-23 of the Findings of Fact above, includes "hazardous substances" as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

33. The conditions described in Paragraphs 24-25 of the Findings of Fact above constitute an actual and/or threatened "release" of a hazardous substance from the facility as defined in Section 101(22) of CERCLA, 42 U.S.C. § 9601(22).

34. Each Respondent is a "person" as defined in Section 101(21) of CERCLA, 42 U.S.C. § 9601(21).

35. Respondents are responsible parties under Sections 104, 107 and 122 of CERCLA, 42 U.S.C. §§ 9604, 9607 and 9622 as follows:

a. Each Respondent is, or is the successor to, a person who generated the hazardous substances found at the Site, who at the time of disposal of any hazardous substances owned or operated the Site, or who arranged for disposal or transport for disposal of hazardous substances at the Site. Each Respondent therefore may be liable under Section 107(a) of CERCLA, 42 U.S.C. § 9607(a).

b. Respondents Apogent Transition, Beazer, and Cooper Industries were the "owners" and/or "operators" of the facility (or the successors to same) at the time of disposal of hazardous substances at the facility, as defined by Section 101(20) of CERCLA, 42 U.S.C. § 9601(20), and within the meaning of Section 107(a)(2) of CERCLA, 42 U.S.C. § 9607(a)(2).

c. Respondents (or their predecessors) arranged for disposal or treatment, or arranged with a transporter for transport for disposal or treatment of hazardous substances at the facility, within the meaning of Section 107(a)(3) of CERCLA, 42 U.S.C. § 9607(a)(3).

36. The actions required by this Agreement are necessary to protect the public health, welfare or the environment, are in the public interest, 42 U.S.C. § 9622(a), are consistent with CERCLA and the NCP, 42 U.S.C. §§ 9604(a)(1), 9622(a), and will expedite effective remedial action and minimize litigation, 42 U.S.C. § 9622(a).

37. EPA has determined that Respondents are qualified to conduct the RI/FFS within the meaning of Section 104(a) of CERCLA, 42 U.S.C. § 9604(a), and will carry out the Work properly and promptly, in accordance with Sections 104(a) and 122(a) of CERCLA, 42 U.S.C. §§ 9604(a) and 9622(a), if Respondents comply with the terms of this Agreement.

## **VII. SETTLEMENT AGREEMENT AND ORDER**

38. Based upon the foregoing Findings of Fact and Conclusions of Law and Determinations, it is hereby Ordered and Agreed that Respondents shall comply with all provisions of this Agreement, including, but not limited to, all appendices to this Agreement and all documents incorporated by reference into this Agreement.

## **VIII. DESIGNATION OF CONTRACTORS AND PROJECT COORDINATORS**

39. Selection of Contractors, Personnel. All Work performed under this Agreement shall be under the direction and supervision of qualified personnel. Within 30 days of the Effective Date of this Agreement, and before the Work outlined below and in the SOW begins, Respondents shall notify EPA in writing of the names, titles, and qualifications of the personnel, including contractors, subcontractors, consultants and laboratories to be used in carrying out such Work. With respect to any proposed contractor, Respondents shall demonstrate that the proposed contractor has a quality system which complies with ANSI/ASQC E4-1994, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," (American National Standard, January 5, 1995, or most recent version), by submitting a copy of the proposed contractor's Quality Management Plan ("QMP"). The QMP should be prepared in accordance with "EPA Requirements for Quality Management Plans (QA/R-2)," (EPA/240/B-01/002, March 2001 or subsequently issued guidance) or equivalent documentation as determined by EPA. The qualifications of the persons undertaking the Work for Respondents shall be subject to EPA's review, for verification that such persons meet minimum technical background and experience requirements. This Agreement is contingent on Respondents' demonstration to EPA's satisfaction that Respondents are qualified to perform properly and promptly the actions set forth in this Agreement. If EPA disapproves in writing of any person's technical qualifications, Respondents shall notify EPA of the identity and qualifications of the replacements within 30 days of the written notice. If EPA subsequently disapproves of the replacement, EPA reserves the right to terminate this Agreement and to conduct a complete RI/FFS, and to seek reimbursement for costs and penalties from Respondents. During the course of the RI/FFS, Respondents shall notify EPA in writing of any changes or additions in the personnel used to carry out such Work, providing their names, titles, and qualifications. EPA shall have the same right to disapprove changes and additions to personnel as it has hereunder regarding the initial notification.

40. Within 45 days after the Effective Date, Respondents shall designate a Project Coordinator who shall be responsible for administration of all actions by Respondents required by this Agreement and shall submit to EPA the designated Project Coordinator's name, address, telephone number, and qualifications. To the greatest extent possible, the Project Coordinator shall be present on Site or readily available during Site Work. EPA retains the right to disapprove of the designated Project Coordinator. If EPA disapproves of the designated Project Coordinator, Respondents shall retain a different Project Coordinator and shall notify EPA of that person's name, address, telephone number and qualifications within 15 days following EPA's disapproval. Respondents shall have the right to change their Project Coordinator, subject to EPA's right to disapprove. Respondents shall notify EPA seven days before such a change is made. The initial notification may be made orally, but shall be promptly followed by a written notification. Receipt by Respondents' Project Coordinator of any notice or communication from EPA relating to this Agreement shall constitute receipt by Respondents.

41. EPA has designated Alison Hess of the Emergency and Remedial Response Division, Special Projects Branch, as its EPA Project Coordinator. EPA will notify Respondents of a change



of its designated EPA Project Coordinator. Except as otherwise provided in this Agreement, Respondents shall direct all submissions required by this Agreement to:

Special Projects Branch  
Emergency and Remedial Response Division  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 19<sup>th</sup> Floor  
New York, New York 10007-1866  
Attn: Alison Hess, Standard Chlorine Chemical Co. EPA Project Coordinator

1 electronic copy to:

Leena Raut, Esq.  
Raut.Leena@epa.gov

Frances Zizila, Esq.  
Zizila.Frances@epa.gov

1 paper copy to:

Jay Nickerson, Case Manager  
New Jersey Department of Environmental Protection  
Brownfield Remediation and Reuse Element  
401 E. State Street  
PO Box 028  
Trenton, NJ 08625

42. EPA's Project Coordinator shall have the authority lawfully vested in a Remedial Project Manager ("RPM") and On-Scene Coordinator ("OSC") by the NCP and shall be responsible for all approvals under this Agreement. In addition, EPA's Project Coordinator shall have the authority consistent with the NCP, to halt any Work required by this Agreement, and to take any necessary response action when s/he determines that conditions at the Site may present an immediate endangerment to public health or welfare or the environment. The absence of the EPA Project Coordinator from the area under study pursuant to this Agreement shall not be cause for the stoppage or delay of Work.

43. EPA shall arrange for a qualified person to assist in its oversight and review of the conduct of the RI/FFS, as required by Section 104(a) of CERCLA, 42 U.S.C. Section 9604(a). Such person shall have the authority to observe Work and make inquiries in the absence of EPA, but not to modify the RI/FFS Work Plan.

## **IX. WORK TO BE PERFORMED**

44. Respondents shall conduct the RI/FFS in accordance with the provisions of this Agreement, the SOW, CERCLA, the NCP and EPA guidance, including, but not limited to the "Interim Final Guidance for Conducting Remedial Investigations and Feasibility Studies under CERCLA" (OSWER Directive # 9355.3-01, October 1988 or subsequently issued guidance), "Guidance for Data Useability in Risk Assessment" (OSWER Directive #9285.7-05, October 1990 or subsequently issued guidance), and guidance referenced therein, EPA Region 2's Clean and Green Policy (available at [www.epa.gov/region02/superfund/green\\_remediation/policy.html](http://www.epa.gov/region02/superfund/green_remediation/policy.html)) and guidances referenced in the SOW, as may be amended or modified by EPA. The RI shall consist of evaluating existing data and collecting any necessary additional data to characterize site conditions, determining the nature and extent of the contamination at or from the Site, assessing risk to human health and the environment and conducting treatability testing as necessary to evaluate the potential performance and cost of the treatment technologies that are being considered. The FFS shall determine and evaluate alternatives for remedial action to prevent, mitigate or otherwise respond to or remedy the release or threatened release of hazardous substances, pollutants, or contaminants at or from the Site. The alternatives evaluated must include, but shall not be limited to, the range of alternatives described in the NCP, and shall include remedial actions that utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In evaluating the alternatives, Respondents shall address the factors required to be taken into account by Section 121 of CERCLA, 42 U.S.C. § 9621, and Section 300.430(e) of the NCP, 40 C.F.R. § 300.430(e). Upon request by EPA, Respondents shall submit in electronic form all portions of any plan, report or other deliverable Respondents are required to submit pursuant to provisions of this Agreement.

45. The major tasks that Respondents must perform are described in the SOW, with the final task identified in the SOW being submission of the FFS Report. Upon receipt of the draft FFS Report, EPA will evaluate, as necessary, the estimates of the risk to the public and environment that are expected to remain after a particular remedial alternative has been completed and will evaluate the durability, reliability and effectiveness of any proposed Institutional Controls.

### **46. Modification of the RI/FFS Work Plan.**

a. If at any time during the RI/FFS process, Respondents identify a need for additional data, Respondents shall submit a memorandum documenting the need for additional data to the EPA Project Coordinator within 30 days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondents and whether it will be incorporated into plans, reports and other deliverables.

b. In the event of unanticipated or changed circumstances at the Site, Respondents shall notify the EPA Project Coordinator by telephone within 24 hours of discovery of the unanticipated or changed circumstances. In the event that EPA determines that the immediate threat

or the unanticipated or changed circumstances warrant changes in the RI/FFS Work Plan, EPA shall modify or amend the RI/FFS Work Plan in writing accordingly. Respondents shall perform the RI/FFS Work Plan as modified or amended.

c. EPA may determine that in addition to tasks defined in the initially approved RI/FFS Work Plan, other additional work may be necessary to accomplish the objectives of the RI/FFS. Respondents agree to perform these response actions in addition to those required by the initially approved RI/FFS Work Plan, including any approved modifications, if EPA determines that such actions are necessary for a complete RI/FFS.

d. Respondents shall confirm their willingness to perform the additional Work in writing to EPA within seven days of receipt of the EPA request. If Respondents object to any modification determined by EPA to be necessary pursuant to this Paragraph, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). The SOW and/or RI/FFS Work Plan shall be modified in accordance with the final resolution of the dispute.

e. Respondents shall complete the additional Work according to the standards, specifications, and schedule set forth or approved by EPA in a written modification to the RI/FFS Work Plan. EPA reserves the right to conduct the Work itself at any point, to seek reimbursement from Respondents, and/or to seek any other appropriate relief.

f. Nothing in this Paragraph shall be construed to limit EPA's authority to require performance of further response actions at the Site.

**47. Off-Site Shipment of Waste Material.** Respondents shall, prior to any off-site shipment of Waste Material from the Site to an out-of-state waste management facility, provide written notification of such shipment of Waste Material to the appropriate state environmental official in the receiving facility's state and to EPA's Project Coordinator. However, this notification requirement shall not apply to any off-site shipments when the total volume of all such shipments will not exceed ten cubic yards.

a. Respondents shall include in the written notification the following information: (1) the name and location of the facility to which the Waste Material is to be shipped; (2) the type and quantity of the Waste Material to be shipped; (3) the expected schedule for the shipment of the Waste Material; and (4) the method of transportation. Respondents shall notify the state in which the planned receiving facility is located of major changes in the shipment plan, such as a decision to ship the Waste Material to another facility within the same state, or to a facility in another state.

b. The identity of the receiving facility and state will be determined by Respondents following the award of the contract for the remedial investigation and focused feasibility study. Respondents shall provide the information required by Subparagraph 47.a and 47.c as soon as practicable after the award of the contract and before the Waste Material is actually shipped.

c. Before shipping any hazardous substances, pollutants, or contaminants from the Site to an off-site location, Respondents shall obtain EPA's certification that the proposed receiving

facility is operating in compliance with the requirements of CERCLA Section 121(d)(3), 42 U.S.C. § 9621(d)(3), and 40 C.F.R. § 300.440. Respondents shall only send hazardous substances, pollutants, or contaminants from the Site to an off-site facility that complies with the requirements of the statutory provision and regulation cited in the preceding sentence.

48. Meetings. Respondents shall make presentations at, and participate in, meetings at the request of EPA during the initiation, conduct, and completion of the RI/FFS. In addition to discussion of the technical aspects of the RI/FFS, topics will include anticipated problems or new issues. Meetings will be scheduled at EPA's discretion.

49. Progress Reports. In addition to the plans, reports and other deliverables set forth in this Agreement, Respondents shall provide to EPA monthly progress reports by the 15th day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Agreement during that month, (2) include all results of sampling and tests and all other data received by Respondents, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FFS completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

50. Emergency Response and Notification of Releases.

a. In the event of any action or occurrence during performance of the Work which causes or threatens a release of Waste Material from the Site that constitutes an emergency situation or may present an immediate threat to public health or welfare or the environment, Respondents shall immediately take all appropriate action. Respondents shall take these actions in accordance with all applicable provisions of this Agreement, including, but not limited to, the Health and Safety Plan, in order to prevent, abate or minimize such release or endangerment caused or threatened by the release. Respondents shall also immediately notify the National Response Center Hotline at (800) 424-8802 and the EPA Project Coordinator or, in the event of his/her unavailability, the Chief of the Special Projects Branch of the Emergency and Remedial Response Division at (212) 637-4435, of the incident or Site conditions. In the event that Respondents fail to take appropriate response action as required by this Paragraph, and EPA takes such action instead, Respondents shall reimburse EPA all costs of the response action not inconsistent with the NCP pursuant to Section XVIII (Payment of Response Costs).

b. In addition, in the event of any release of a hazardous substance from the Site, Respondents shall immediately notify the EPA Project Coordinator, the Chief of the Special Projects Branch of the Emergency and Remedial Response Division at (212) 637-4435, and the National Response Center at (800) 424-8802. Respondents shall submit a written report to EPA within seven days after each release, setting forth the events that occurred and the measures taken or to be taken to mitigate any release or endangerment caused or threatened by the release and to prevent the reoccurrence of such a release. This reporting requirement is in addition to, and not in lieu of, reporting under Section 103(c) of CERCLA, 42 U.S.C. § 9603(c), and Section 304 of the Emergency Planning and Community Right-To-Know Act of 1986, 42 U.S.C. § 11004, *et seq.*

## **X. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS**

51. After review of any plan, report or other item that is required to be submitted for approval pursuant to this Agreement, in a notice to Respondents EPA shall: (a) approve, in whole or in part, the submission; (b) approve the submission upon specified conditions; (c) modify the submission to cure the deficiencies; (d) disapprove, in whole or in part, the submission, directing that Respondents modify the submission; or (e) any combination of the above. However, EPA shall not modify a submission without first providing Respondents at least one notice of deficiency and an opportunity to cure within 21 days, except where to do so would cause serious disruption to the Work or where previous submission(s) have been disapproved due to material defects.

52. In the event of approval, approval upon conditions, or modification by EPA, pursuant to Subparagraph 51(a), (b), (c) or (e), Respondents shall proceed to take any action required by the plan, report or other deliverable, as approved or modified by EPA subject only to their right to invoke the Dispute Resolution procedures set forth in Section XV (Dispute Resolution) with respect to the modifications or conditions made by EPA. Following EPA approval or modification of a submission or portion thereof, Respondents shall not thereafter alter or amend such submission or portion thereof unless directed by EPA. In the event that EPA modifies the submission to cure the deficiencies pursuant to Subparagraph 51(c) and the submission had a material defect, EPA retains the right to seek stipulated penalties, as provided in Section XVI (Stipulated Penalties).

### **53. Resubmission.**

a. Upon receipt of a notice of disapproval, Respondents shall, within 21 days or such longer time as specified by EPA in such notice, correct the deficiencies and resubmit the plan, report, or other deliverable for approval. Any stipulated penalties applicable to the submission, as provided in Section XVI, shall accrue during the 21 day period or otherwise specified period but shall not be payable unless the resubmission is disapproved or modified due to a material defect as provided in Paragraphs 54 and 55.

b. Notwithstanding the receipt of a notice of disapproval, Respondents shall proceed to take any action required by any non-deficient portion of the submission, unless otherwise directed by EPA. Implementation of any non-deficient portion of a submission shall not relieve Respondents of any liability for stipulated penalties under Section XVI (Stipulated Penalties).

c. Respondents shall not proceed further with any subsequent activities or tasks until receiving EPA approval, approval on condition or modification of the following deliverables: RI/FFS Work Plan, Draft RI Report, Treatability Testing Work Plan (if necessary) and Draft FFS Report. While awaiting EPA approval, approval on condition or modification of these deliverables, Respondents shall proceed with all other tasks and activities which may be conducted independently of these deliverables, in accordance with the schedule set forth under this Agreement.

d. For all remaining deliverables not listed above in Subparagraph 53.c., Respondents shall proceed with all subsequent tasks, activities and deliverables without awaiting EPA approval on the submitted deliverable. EPA reserves the right to stop Respondents from

proceeding further, either temporarily or permanently, on any task, activity or deliverable at any point during the RI/FFS.

54. If EPA disapproves a resubmitted plan, report or other deliverable, or portion thereof, EPA may again direct Respondents to correct the deficiencies. EPA shall also retain the right to modify or develop the plan, report or other deliverable. Respondents shall implement any such plan, report, or deliverable as corrected, modified or developed by EPA, subject only to Respondents' right to invoke the procedures set forth in Section XV (Dispute Resolution).

55. If upon resubmission, a plan, report, or other deliverable is disapproved or modified by EPA due to a material defect, Respondents shall be deemed to have failed to submit such plan, report, or other deliverable timely and adequately unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution) and EPA's action is revoked or substantially modified pursuant to a Dispute Resolution decision issued by EPA or superseded by an agreement reached pursuant to that Section. The provisions of Section XV (Dispute Resolution) and Section XVI (Stipulated Penalties) shall govern the implementation of the Work and accrual and payment of any stipulated penalties during Dispute Resolution. If EPA's disapproval or modification is not otherwise revoked, substantially modified or superceded as a result of a decision or agreement reached pursuant to the Dispute Resolution process set forth in Section XV, stipulated penalties shall accrue for such violation from the date on which the initial submission was originally required, as provided in Section XVI.

56. In the event that EPA takes over some of the tasks, but not the preparation of the RI Report or the FFS Report, Respondents shall incorporate and integrate information supplied by EPA into the final reports.

57. All plans, reports, and other deliverables submitted to EPA under this Agreement shall, upon approval or modification by EPA, be incorporated into and enforceable under this Agreement. In the event EPA approves or modifies a portion of a plan, report, or other deliverable submitted to EPA under this Agreement, the approved or modified portion shall be incorporated into and enforceable under this Agreement.

58. Neither failure of EPA to expressly approve or disapprove of Respondents' submissions within a specified time period, nor the absence of comments, shall be construed as approval by EPA. Whether or not EPA gives express approval for Respondents' deliverables, Respondents are responsible for preparing deliverables acceptable to EPA.

## **XI. QUALITY ASSURANCE, SAMPLING, AND ACCESS TO INFORMATION**

59. Quality Assurance. Respondents shall assure that Work performed, samples taken and analyses conducted conform to the requirements of the SOW, the QAPP and guidances identified therein. Respondents will assure that field personnel used by Respondents are properly trained in the use of field equipment and in chain of custody procedures. Respondents shall only use laboratories which have a documented quality system that complies with "EPA Requirements for Quality

Management Plans (QA/R-2)" (EPA/240/B-01/002, March 2001) or equivalent documentation as determined by EPA.

60. Sampling.

a. All results of sampling, tests, modeling or other data generated by Respondents, or on Respondents' behalf, during the period that this Agreement is effective, shall be submitted to EPA in the next monthly progress report as described in Paragraph 49 of this Agreement. EPA will make available to Respondents validated data generated by EPA unless it is exempt from disclosure by any federal or state law or regulation.

b. Respondents shall verbally notify EPA at least 14 days prior to conducting significant field events as described in the SOW or RI/FFS Work Plan. At EPA's verbal or written request, or the request of EPA's oversight assistant, Respondents shall allow split or duplicate samples to be taken by EPA (and its authorized representatives) of any samples collected in implementing this Agreement. All split samples of Respondents shall be analyzed by the methods identified in the QAPP.

61. Access to Information.

a. Respondents shall provide to EPA, upon request, copies of all documents and information within their possession or control or that of their contractors or agents relating to activities at the Site or to the implementation of this Agreement, including, but not limited to, raw data, sampling, analysis, chain of custody records, manifests, trucking logs, receipts, reports, sample traffic routing, correspondence, historical information or other documents or information related to the Work. Respondents shall also make available to EPA, for purposes of investigation, information gathering, or testimony, their employees, agents, or representatives with knowledge of relevant facts concerning the performance of the Work.

b. Respondents may assert business confidentiality claims covering part or all of the documents or information submitted to EPA under this Agreement to the extent permitted by and in accordance with Section 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b). Documents or information determined to be confidential by EPA will be afforded the protection specified in 40 C.F.R. Part 2, Subpart B. If no claim of confidentiality accompanies documents or information when it is submitted to EPA, or if EPA has notified Respondents that the documents or information are not confidential under the standards of Section 104(e)(7) of CERCLA or 40 C.F.R. Part 2, Subpart B, the public may be given access to such documents or information without further notice to Respondents. Respondents shall segregate and clearly identify all documents or information submitted under this Agreement for which Respondents assert business confidentiality claims.

c. Respondents may assert that certain documents, records and other information are privileged under the attorney-client privilege or any other privilege or protection from disclosure recognized by federal law. If the Respondents assert such a privilege in lieu of providing documents, they shall provide EPA with the following: 1) the title of the document, record, or information; 2)

the date of the document, record, or information; 3) the name and title of the author of the document, record, or information; 4) the name and title of each addressee and recipient; 5) a description of the contents of the document, record, or information; and 6) the privilege asserted by Respondents. However, no documents, reports or other information created or generated pursuant to the requirements of this Agreement shall be withheld on the grounds that they are privileged.

d. No claim of confidentiality shall be made with respect to any data, including, but not limited to, all sampling, analytical, monitoring, hydrogeologic, scientific, chemical, or engineering data, or any other documents or information evidencing conditions at or around the Site.

62. In entering into this Agreement, Respondents waive any objections to any data gathered, generated, or evaluated by EPA, the State or Respondents in the performance or oversight of the Work that has been verified according to the quality assurance/quality control ("QA/QC") procedures required by the Agreement or any EPA-approved RI/FFS Work Plans. If Respondents object to any other data relating to the RI/FFS, Respondents shall submit to EPA a report that specifically identifies and explains its objections, describes the acceptable uses of the data, if any, and identifies any limitations to the use of the data. The report must be submitted to EPA within 15 days of the monthly progress report containing the data.

## **XII. SITE ACCESS AND INSTITUTIONAL CONTROLS**

63. If the Site, or any other property where access is needed to implement this Agreement, is owned or controlled by any of Respondents, such Respondents shall, commencing on the Effective Date, provide EPA, the State, and their representatives, including contractors, with access at all reasonable times to the Site, or such other property, for the purpose of conducting any activity related to this Agreement.

64. Where any action under this Agreement is to be performed in areas owned by or in possession of someone other than Respondents, Respondents shall use their best efforts to obtain all necessary access agreements within 90 days after the Effective Date, or as otherwise specified in writing by the EPA Project Coordinator. Respondents shall immediately notify EPA if after using their best efforts they are unable to obtain such agreements. For purposes of this Paragraph, "best efforts" includes the payment of reasonable sums of money in consideration of access. Respondents shall describe in writing their efforts to obtain access. If Respondents cannot obtain access agreements, EPA may either (i) obtain access for Respondents or assist Respondents in gaining access, to the extent necessary to effectuate the response actions described herein, using such means as EPA deems appropriate; (ii) perform those tasks or activities with EPA contractors; or (iii) terminate the Agreement. Respondents shall reimburse EPA for all costs and attorney's fees incurred by the United States in obtaining such access, in accordance with the procedures in Section XVIII (Payment of Response Costs). If EPA performs those tasks or activities with EPA contractors and does not terminate the Agreement, Respondents shall perform all other tasks or activities not requiring access to that property, and shall reimburse EPA for all costs incurred in performing such tasks or activities. Respondents shall integrate the results of any such tasks or activities undertaken by EPA into its plans, reports and other deliverables.



65. Notwithstanding any provision of this Agreement, EPA and the State retain all of their access authorities and rights, including enforcement authorities related thereto, under CERCLA, RCRA, and any other applicable statutes or regulations.

### **XIII. COMPLIANCE WITH OTHER LAWS**

66. Respondents shall comply with all applicable state and federal laws and regulations when performing the RI/FFS. No local, state, or federal permit shall be required for any portion of any action conducted entirely on-site, including studies, if the action is selected and carried out in compliance with Section 121 of CERCLA, 42 U.S.C. § 9621. Where any portion of the Work is to be conducted off-site and requires a federal or state permit or approval, Respondents shall submit timely and complete applications and take all other actions necessary to obtain and to comply with all such permits or approvals. This Agreement is not, and shall not be construed to be, a permit issued pursuant to any federal or state statute or regulation.

### **XIV. RETENTION OF RECORDS**

67. During the pendency of this Agreement and for a minimum of six years after commencement of construction of any remedial action, each Respondent shall preserve and retain all non-identical copies of documents, records, and other information (including documents, records, or other information in electronic form) now in its possession or control or which come into its possession or control that relate in any manner to the performance of the Work or the liability of any person under CERCLA with respect to the Site, regardless of any corporate retention policy to the contrary. Until six years after commencement of construction of any remedial action, Respondents shall also instruct their contractors and agents to preserve all documents, records, and other information of whatever kind, nature or description relating to performance of the Work.

68. At the conclusion of this document retention period, Respondents shall notify EPA at least 90 days prior to the destruction of any such documents, records or other information, and, upon request by EPA, Respondents shall deliver any such documents, records, or other information to EPA. Respondents may assert that certain documents, records, and other information are privileged under the attorney-client privilege or any other privilege or protection from disclosure recognized by federal law. If Respondents assert such a privilege, they shall provide EPA with the following: 1) the title of the document, record, or other information; 2) the date of the document, record, or other information; 3) the name and title of the author of the document, record, or other information; 4) the name and title of each addressee and recipient; 5) a description of the subject of the document, record, or other information; and 6) the privilege asserted by Respondents. However, no documents, records or other information created or generated pursuant to the requirements of this Agreement shall be withheld on the grounds that they are privileged.

69. Each Respondent hereby certifies individually that to the best of its knowledge and belief, after thorough inquiry, it has not mutilated, discarded, destroyed or otherwise disposed of any

records, documents or other information (other than identical copies) relating to its potential liability regarding the Site since notification of potential CERCLA liability by EPA, and that it has fully complied with any and all EPA requests for information pursuant to Sections 104(e) and 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

## **XV. DISPUTE RESOLUTION**

70. Unless otherwise expressly provided for in this Agreement, the dispute resolution procedures of this Section shall be the exclusive mechanism for resolving disputes arising under this Agreement. The Parties shall attempt to resolve any disagreements concerning this Agreement expeditiously and informally.

71. If Respondents object to any EPA action taken pursuant to this Agreement, including billings for Future Response Costs, they shall notify EPA in writing of their objection(s) within 14 days of such action, unless the objection(s) has/have been resolved informally. EPA and Respondents shall have 30 days from EPA's receipt of Respondents' written objection(s) to resolve the dispute (the "Negotiation Period"). The Negotiation Period may be extended at the sole discretion of EPA. Such extension may be granted verbally but must be confirmed in writing.

72. Any agreement reached by the Parties pursuant to this Section shall be in writing and shall, upon signature by the Parties, be incorporated into and become an enforceable part of this Agreement. If the Parties are unable to reach an agreement within the Negotiation Period, an EPA management official at the level of Chief of the Special Projects Branch, or higher, will issue a written decision. EPA's decision shall be incorporated into and become an enforceable part of this Agreement. Respondents' obligations under this Agreement shall not be tolled by submission of any objection for dispute resolution under this Section. Following resolution of the dispute, as provided by this Section, Respondents shall fulfill the requirement that was the subject of the dispute in accordance with the agreement reached or with EPA's decision, whichever occurs, and regardless of whether Respondents agree with the decision.

## **XVI. STIPULATED PENALTIES**

73. Respondents shall be liable to EPA for stipulated penalties in the amounts set forth in Paragraphs 74 and 75 for failure to comply with any of the requirements of this Agreement specified below unless excused under Section XVII (Force Majeure). "Compliance" by Respondents shall include completion of the Work under this Agreement or any activities contemplated under any RI/FFS Work Plan or other plan approved under this Agreement identified below, in accordance with all applicable requirements of law, this Agreement, the SOW, and any plans or other documents approved by EPA pursuant to this Agreement and within the specified time schedules established by and approved under this Agreement.

**74. Stipulated Penalty Amounts - Work.**

a. For the following major deliverables, stipulated penalties shall accrue in the amount of:

**Penalty Per Violation Per Day    Period of Noncompliance**

\$ 1,500.00	1 <sup>st</sup> through 14 <sup>th</sup> day
\$ 2,500.00	15 <sup>th</sup> through 30 <sup>th</sup> day
\$ 5,000.00	31 <sup>st</sup> day and beyond

- i. Submission of name of the Project Coordinator to EPA pursuant to Section X of this Agreement;
- ii. Submission of RI/FFS Work Plan;
- iii. Submission of Baseline Ecological Risk Assessment Scope of Work (if required by EPA);
- iv. Submission of Draft RI Report;
- v. Submission of RI Report;
- vi. Submission of Draft FFS Report;
- vii. Submission of FFS Report.

b. For the following interim deliverables, stipulated penalties shall accrue in the amount of:

**Penalty Per Violation Per Day    Period of Noncompliance**

\$ 1,000.00	1 <sup>st</sup> through 14 <sup>th</sup> day
\$ 1,500.00	15 <sup>th</sup> through 30 <sup>th</sup> day
\$ 2,500.00	31 <sup>st</sup> day and beyond

- i. Submission of Identification of Candidate Technologies Memorandum;
- ii. Submission of Treatability Testing Work Plan (if required by EPA);
- iii. Submission of Treatability Testing Evaluation Report (if required by EPA);

- iv. Submission of Memorandum on Exposure Scenarios and Assumptions;
- v. Submission of Pathway Analysis Report;
- vi. Submission of Baseline Human Health Risk Assessment;
- vii. Submission of Screening Level Ecological Risk Assessment;
- viii. Submission of Baseline Ecological Risk Assessment (if required by EPA); and
- ix. Submission of Development and Screening of Remedial Alternatives Technologies Memorandum (if required by EPA)].

75. Stipulated Penalty Amounts - Other. For failure to make timely payments pursuant to Section XX, or failure to submit timely or adequate monthly progress reports, or any other violations of this Settlement Agreement not specified above, stipulated penalties shall accrue in the amount of:

Penalty Per Violation Per Day    Period of Noncompliance

\$ 500.00	1 <sup>st</sup> through 14 <sup>th</sup> day
\$ 1,000.00	15 <sup>th</sup> through 30 <sup>th</sup> day
\$ 2,500.00	31 <sup>st</sup> day and beyond

76. In the event that EPA assumes performance of a portion or all of the Work pursuant to Paragraph 94 of Section XX (Reservation of Rights by EPA), Respondents shall be liable for a stipulated penalty in the amount of \$750,000.00.

77. All penalties shall begin to accrue on the day after the complete performance is due or the day a violation occurs, and shall continue to accrue through the final day of the correction of the noncompliance or completion of the activity. However, stipulated penalties shall not accrue: (1) with respect to a deficient submission under Section X (EPA Approval of Plans and Other Submissions), during the period, if any, beginning on the 31st day after EPA's receipt of such submission until the date that EPA notifies Respondents of any deficiency; and (2) with respect to a decision by the EPA Management Official designated in Paragraph 72 of Section XV (Dispute Resolution), during the period, if any, beginning on the 21st day after the Negotiation Period begins until the date that the EPA Management Official issues a final decision regarding such dispute. Nothing herein shall prevent the simultaneous accrual of separate penalties for separate violations of this Agreement.

78. Following EPA's determination that Respondents have failed to comply with a requirement of this Agreement, EPA may give Respondents written notification of the same and describe the noncompliance. EPA may send Respondents a written demand for the payment of the penalties. However, penalties shall accrue as provided in the preceding Paragraph regardless of whether EPA has notified Respondents of a violation.

79. All penalties accruing under this Section shall be due and payable to EPA within 30 days of Respondents' receipt from EPA of a demand for payment of the penalties, unless Respondents invoke the dispute resolution procedures in accordance with Section XV (Dispute Resolution). All payments to EPA under this Section shall be made in accordance with the procedures set forth in Paragraph 87, and shall indicate that the payment is for stipulated penalties. At the time of payment, Respondents shall send notice that payment has been made to the EPA Project Coordinator, Site Attorney, and Cincinnati Finance Center in accordance with Paragraph 87.

80. The payment of penalties shall not alter in any way Respondents' obligation to complete performance of the Work required under this Agreement.

81. Penalties shall continue to accrue as provided in Paragraph 77 during any dispute resolution period, but need not be paid until 15 days after the dispute is resolved by agreement or by receipt of EPA's decision.

82. If Respondents fail to pay stipulated penalties when due, EPA may institute proceedings to collect the penalties, as well as Interest. Respondents shall pay Interest on the unpaid balance, which shall begin to accrue on the date of demand made pursuant to Paragraph 79.

83. Nothing in this Agreement shall be construed as prohibiting, altering, or in any way limiting the ability of EPA to seek any other remedies or sanctions available by virtue of Respondents' violation of this Agreement or of the statutes and regulations upon which it is based, including, but not limited to, penalties pursuant to Section 122(l) of CERCLA, 42 U.S.C. § 9622(l), and punitive damages pursuant to Section 107(c)(3) of CERCLA, 42 U.S.C. § 9607(c)(3). Provided, however, that EPA shall not seek civil penalties pursuant to Section 122(l) of CERCLA or punitive damages pursuant to Section 107(c)(3) of CERCLA for any violation for which a stipulated penalty is provided herein, except in the case of willful violation of this Agreement or in the event that EPA assumes performance of a portion or all of the Work pursuant to Section XX (Reservation of Rights by EPA), Paragraph 94. Notwithstanding any other provision of this Section, EPA may, in its unreviewable discretion, waive any portion of stipulated penalties that have accrued pursuant to this Agreement.

## **XVII. FORCE MAJEURE**

84. Respondents agree to perform all requirements of this Agreement within the time limits established under this Agreement, unless the performance is delayed by a *force majeure*. For purposes of this Agreement, *force majeure* is defined as any event arising from causes beyond the control of Respondents or of any entity controlled by Respondents, including but not limited to their contractors and subcontractors, which delays or prevents performance of any obligation under this Agreement despite Respondents' best efforts to fulfill the obligation. *Force majeure* does not include financial inability to complete the Work or increased cost of performance.

85. If any event occurs or has occurred that may delay the performance of any obligation under this Agreement, whether or not caused by a *force majeure* event, Respondents shall notify EPA

orally within 48 hours of when Respondents first knew that the event might cause a delay. Within seven days thereafter, Respondents shall provide to EPA in writing an explanation and description of the reasons for the delay; the anticipated duration of the delay; all actions taken or to be taken to prevent or minimize the delay; a schedule for implementation of any measures to be taken to prevent or mitigate the delay or the effect of the delay; Respondents' rationale for attributing such delay to a *force majeure* event if they intend to assert such a claim; and a statement as to whether, in the opinion of Respondents, such event may cause or contribute to an endangerment to public health, welfare or the environment. Failure to comply with the above requirements shall preclude Respondents from asserting any claim of *force majeure* for that event for the period of time of such failure to comply and for any additional delay caused by such failure.

86. If EPA agrees that the delay or anticipated delay is attributable to a *force majeure* event, the time for performance of the obligations under this Agreement that are affected by the *force majeure* event will be extended by EPA for such time as is necessary to complete those obligations. An extension of the time for performance of the obligations affected by the *force majeure* event shall not, of itself, extend the time for performance of any other obligation. If EPA does not agree that the delay or anticipated delay has been or will be caused by a *force majeure* event, EPA will notify Respondents in writing of its decision. If EPA agrees that the delay is attributable to a *force majeure* event, EPA will notify Respondents in writing of the length of the extension, if any, for performance of the obligations affected by the *force majeure* event.

## **XVIII. PAYMENT OF RESPONSE COSTS**

### **87. Payments of Future Response Costs.**

a. Respondents shall pay EPA all Future Response Costs not inconsistent with the NCP. On a periodic basis, EPA will send Respondents a bill requiring payment that includes a printout of cost data in EPA's financial management system, known as a SCORPIOS Report. Respondents shall make all payments within 30 days of receipt of each bill requiring payment, except as otherwise provided in Paragraph 89 of this Agreement. Respondents shall make all payments required by this Paragraph in accordance the procedures set forth below.

b. Remit the amount of the payments to EPA by Electronic Funds Transfer ("EFT") to the Federal Reserve Bank of New York, accompanied by a statement providing the following information:

- (i) Amount of payment
- (ii) Title of Federal Reserve Bank Account to receive the payment: **EPA**
- (iii) Account Code for Federal Reserve Bank Account receiving the payment:  
**68010727**
- (iv) Federal Reserve Bank ABA Routing Number: **021030004**
- (v) Name and address of Settling Parties
- (vi) Docket Number **CERCLA-02-2013-2015**
- (vii) Site/Spill Identifier: **02-RM**

(viii) Field Tag 4200 of the Fedwire message: D 68010727 Environmental Protection Agency

(x) SWIFT address:  
FRNYUS33  
33 Liberty Street  
New York, NY 10045

c. To ensure that a payment is properly recorded, a letter should be sent at the time of payment that references the date of the EFT, the payment amount, that the payment is for Future Response Costs, the name of the Site, the Docket number, and the name and address of the party making payment to the United States, to the EPA Project Coordinator, Site Attorney and Financial Management Center, as follows:

Special Projects Branch  
Emergency and Remedial Response Division  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 19th Floor  
New York, New York 10007-1866  
Attn: Alison Hess, Standard Chlorine Chemical Co. Site EPA Project Coordinator

New Jersey Superfund Branch  
Office of Regional Counsel  
U.S. Environmental Protection Agency, Region 2  
290 Broadway, 17th Floor  
New York, New York 10007-1866  
Attn: Standard Chlorine Chemical Co. Site Attorney

U.S. Environmental Protection Agency  
Cincinnati Finance Center, MS: NWD  
26 W. Martin Luther King Drive  
Cincinnati, Ohio 45268  
Attn: Finance (Richard Rice)  
AcctsReceivable.CINWD@epa.gov

88. The total amount to be paid by Respondents pursuant to Subparagraph 87.a. shall be deposited in the Standard Chlorine Chemical Company Site Special Account within the EPA Hazardous Substance Superfund to be retained and used to conduct or finance response actions at or in connection with the Site, or to be transferred by EPA to the EPA Hazardous Substance Superfund.

89. If Respondents do not pay Future Response Costs within 30 days of Respondents' receipt of a bill, Respondents shall pay Interest on the Future Response Costs, respectively. The Interest on unpaid Future Response Costs shall begin to accrue on the date of the bill and shall continue to accrue until the date of payment. If EPA receives a partial payment, Interest shall accrue on any unpaid balance. Payments of Interest made under this Paragraph shall be in addition to such other

remedies or sanctions available to the United States by virtue of Respondents' failure to make timely payments under this Section, including but not limited to, payments of stipulated penalties pursuant to Section XVI. Respondents shall make all payments required by this Paragraph in the manner described in Paragraph 87.

90. Respondents may contest payment of any Future Response Costs under Paragraph 87 if they determine that EPA has made a mathematical error, or if they believe EPA incurred excess costs as a direct result of an EPA action that was inconsistent with the NCP. Such objection shall be made in writing within 30 days of receipt of the bill and must be sent to the EPA Project Coordinator. Any such objection shall specifically identify the contested Future Response Costs and the basis for objection. In the event of an objection, Respondents shall within the 30 day period pay all uncontested Future Response Costs to EPA in the manner described in Paragraph 87. Simultaneously, Respondents shall establish an interest-bearing escrow account in a federally-insured bank duly chartered in the State of New Jersey and remit to that escrow account funds equivalent to the amount of the contested Future Response Costs. Respondents shall send to the EPA Project Coordinator a copy of the transmittal letter and check paying the uncontested Future Response Costs, and a copy of the correspondence that establishes and funds the escrow account, including, but not limited to, information containing the identity of the bank and bank account under which the escrow account is established as well as a bank statement showing the initial balance of the escrow account. Simultaneously with establishment of the escrow account, Respondents shall initiate the Dispute Resolution procedures in Section XV (Dispute Resolution). If EPA prevails in the dispute, within 5 days of the resolution of the dispute, Respondents shall pay the sums due (with accrued interest) to EPA in the manner described in Paragraph 88. If Respondents prevail concerning any aspect of the contested costs, Respondents shall pay that portion of the costs (plus associated accrued interest) for which they did not prevail to EPA in the manner described in Paragraph 87. Respondents shall be disbursed any balance of the escrow account. The dispute resolution procedures set forth in this Paragraph in conjunction with the procedures set forth in Section XV (Dispute Resolution) shall be the exclusive mechanisms for resolving disputes regarding Respondents' obligation to reimburse EPA for its Future Response Costs.

#### **XIX. COVENANT NOT TO SUE BY EPA**

91. In consideration of the actions that will be performed and the payments that will be made by Respondents under the terms of this Agreement, and except as otherwise specifically provided in this Agreement, EPA covenants not to sue or to take administrative action against Respondents pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606 and 9607(a), for the Work and Future Response Costs. This covenant not to sue shall take effect upon the Effective Date and is conditioned upon the complete and satisfactory performance by Respondents of all obligations under this Agreement, including, but not limited to, payment of Future Response Costs pursuant to Section XVIII. This covenant not to sue extends only to Respondents and does not extend to any other person.



## **XX. RESERVATIONS OF RIGHTS BY EPA**

92. Except as specifically provided in this Agreement, nothing herein shall limit the power and authority of EPA or the United States to take, direct, or order all actions necessary to protect public health, welfare, or the environment or to prevent, abate, or minimize an actual or threatened release of hazardous substances, pollutants or contaminants, or hazardous or solid waste on, at, or from the Site. Further, nothing herein shall prevent EPA from seeking legal or equitable relief to enforce the terms of this Agreement, from taking other legal or equitable action as it deems appropriate and necessary, or from requiring Respondents in the future to perform additional activities pursuant to CERCLA or any other applicable law.

93. The covenant not to sue set forth in Section XIX above does not pertain to any matters other than those expressly identified therein. EPA reserves, and this Agreement is without prejudice to, all rights against Respondents with respect to all other matters, including, but not limited to:

- a. claims based on a failure by Respondents to meet a requirement of this Agreement;
- b. liability for costs not included within the definition of Future Response Costs;
- c. liability for performance of response action other than the Work;
- d. criminal liability;
- e. liability for damages for injury to, destruction of, or loss of natural resources, and for the costs of any natural resource damage assessments;
- f. liability arising from the past, present, or future disposal, release or threat of release of Waste Materials outside of the Site; and
- g. liability for costs incurred or to be incurred by the ATSDR related to the Site.

94. Work Takeover. In the event EPA determines that Respondents have ceased implementation of any portion of the Work, are seriously or repeatedly deficient or late in their performance of the Work, or are implementing the Work in a manner which may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portion of the Work as EPA determines necessary. Respondents may invoke the procedures set forth in Section XV (Dispute Resolution) to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Costs incurred by EPA in performing the Work pursuant to this Paragraph shall be considered Future Response Costs that Respondents shall pay pursuant to Section XVIII (Payment of Response Costs). Notwithstanding any other provision of this Agreement, EPA retains all authority and reserves all rights to take any and all response actions authorized by law.

## **XXI. COVENANT NOT TO SUE BY RESPONDENTS**

95. Respondents covenant not to sue and agree not to assert any claims or causes of action against the United States, or its contractors or employees, with respect to the Work, Future Response Costs, or this Agreement, including, but not limited to:

a. any direct or indirect claim for reimbursement from the Hazardous Substance Superfund established by 26 U.S.C. § 9507, based on Sections 106(b)(2), 107, 111, 112, or 113 of CERCLA, 42 U.S.C. §§ 9606(b)(2), 9607, 9611, 9612, or 9613, or any other provision of law;

b. any claim arising out of the Work or arising out of the response actions for which Future Response Costs have or will be incurred, including any claim under the United States Constitution, the New Jersey Constitution, the Tucker Act, 28 U.S.C. § 1491, the Equal Access to Justice Act, 28 U.S.C. § 2412, as amended, or at common law; or

c. any claim against the United States pursuant to Sections 107 and 113 of CERCLA, 42 U.S.C. §§ 9607 and 9613, relating to the Work or payment of Future Response Costs.

96. These covenants not to sue shall not apply in the event the United States brings a cause of action or issues an order pursuant to the reservations set forth in Paragraphs 93 (b), (c), and (e) - (g), but only to the extent that Respondents' claims arise from the same response action, response costs, or damages that the United States is seeking pursuant to the applicable reservation.

97. Nothing in this Agreement shall be deemed to constitute approval or preauthorization of a claim within the meaning of Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R. § 300.700(d).

## **XXII. OTHER CLAIMS**

98. By issuance of this Agreement, the United States and EPA assume no liability for injuries or damages to persons or property resulting from any acts or omissions of Respondents.

99. Except as expressly provided in Section XIX (Covenant Not to Sue by EPA), nothing in this Agreement constitutes a satisfaction of or release from any claim or cause of action against Respondents or any person not a party to this Agreement, for any liability such person may have under CERCLA, other statutes, or common law, including but not limited to any claims of the United States for costs, damages and interest under Sections 106 and 107 of CERCLA, 42 U.S.C. §§ 9606 and 9607.

100. No action or decision by EPA pursuant to this Agreement shall give rise to any right to judicial review except as set forth in Section 113(h) of CERCLA, 42 U.S.C. § 9613(h).

### **XXIII. CONTRIBUTION PROTECTION**

101. a. The Parties agree that this Agreement constitutes an administrative settlement for purposes of Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), and that each Respondent is entitled, as of the Effective Date, to protection from contribution actions or claims as provided by Sections 113(f)(2) and 122(h)(4) of CERCLA, 42 U.S.C. §§ 9613(f)(2) and 9622(h)(4), or as may be otherwise provided by law, for “matters addressed” in this Agreement. The “matters addressed” in this Agreement are the Work and Future Response Costs.

b. The Parties agree that this Agreement constitutes an administrative settlement for purposes of Section 113(f)(3)(B) of CERCLA, 42 U.S.C. § 9613(f)(3)(B), pursuant to which Respondents have, as of the Effective Date, resolved their liability to the United States for the Work and Future Response Costs.

c. Except as provided in Section XXI (Covenant Not to Sue by Respondents) of this Agreement, nothing in this Agreement precludes the United States or Respondents from asserting any claims, causes of action, or demands for indemnification, contribution, or cost recovery against any persons not parties to this Agreement. Nothing in this Agreement diminishes the right of the United States, pursuant to Sections 113(f)(2) and (3) of CERCLA, 42 U.S.C. § 9613(f)(2)-(3), to pursue any such persons to obtain additional response costs or response action and to enter into settlements that give rise to contribution protection pursuant to Section 113(f)(2).

### **XXIV. INDEMNIFICATION**

102. Respondents shall indemnify, save and hold harmless the United States, its officials, agents, contractors, subcontractors, employees and representatives from any and all claims or causes of action arising from, or on account of negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, or subcontractors, in carrying out actions pursuant to this Agreement. In addition, Respondents agree to pay the United States all costs incurred by the United States, including but not limited to attorneys fees and other expenses of litigation and settlement, arising from or on account of claims made against the United States based on negligent or other wrongful acts or omissions of Respondents, their officers, directors, employees, agents, contractors, subcontractors and any persons acting on their behalf or under their control, in carrying out activities pursuant to this Agreement. The United States shall not be held out as a party to any contract entered into by or on behalf of Respondents in carrying out activities pursuant to this Agreement. Neither Respondents nor any such contractor shall be considered an agent of the United States. Nothing in this Agreement, however, requires indemnification by Respondents for any claim or cause of action against the United States based on negligent action taken solely or directly by EPA (not including oversight or approval of plans or activities of the Respondents).

103. The United States shall give Respondents notice of any claim for which the United States plans to seek indemnification pursuant to this Section and shall consult with Respondents prior to settling such claim.

104. Respondents waive all claims against the United States for damages or reimbursement or for set-off of any payments made or to be made to the United States, arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site. In addition, Respondents shall indemnify and hold harmless the United States with respect to any and all claims for damages or reimbursement arising from or on account of any contract, agreement, or arrangement between any one or more of Respondents and any person for performance of Work on or relating to the Site.

## **XXV. INSURANCE**

105. At least 15 days prior to commencing any On-Site Work under this Agreement, Respondents shall secure, and shall maintain for the duration of this Agreement, comprehensive general liability insurance and automobile insurance with limits of \$1,000,000.00 combined single limit, naming the EPA as an additional insured. Within the same period, Respondents shall provide EPA with certificates of such insurance and a copy of each insurance policy. Respondents shall submit such certificates and copies of policies each year on the anniversary of the Effective Date. In addition, for the duration of the Agreement, Respondents shall satisfy, or shall ensure that their contractors or subcontractors satisfy, all applicable laws and regulations regarding the provision of workers' compensation insurance for all persons performing the Work on behalf of Respondents in furtherance of this Agreement. If Respondents demonstrate by evidence satisfactory to EPA that any contractor or subcontractor maintains insurance equivalent to that described above, or insurance covering some or all of the same risks but in an equal or lesser amount, then Respondents need provide only that portion of the insurance described above which is not maintained by such contractor or subcontractor.

## **XXVI. FINANCIAL ASSURANCE**

106. Within 30 days of the Effective Date, Respondents shall establish and maintain financial security for the benefit of EPA in the amount of \$750,000.00 in one or more of the following forms, in order to secure the full and final completion of Work by Respondents:

- a. a surety bond unconditionally guaranteeing payment and/or performance of the Work;
- b. one or more irrevocable letters of credit, payable to or at the direction of EPA, issued by financial institution(s) acceptable in all respects to EPA equaling the total estimated cost of the Work;
- c. a trust fund administered by a trustee acceptable in all respects to EPA;
- d. a policy of insurance issued by an insurance carrier acceptable in all respects to EPA, which ensures the payment and/or performance of the Work;

e. a corporate guarantee to perform the Work provided by one or more parent corporations or subsidiaries of Respondents, or by one or more unrelated corporations that have a substantial business relationship with at least one of Respondents; including a demonstration that any such company satisfies the financial test requirements of 40 C.F.R. Part 264.143(f); and/or

f. a corporate guarantee to perform the Work by one or more of Respondents, including a demonstration that any such Respondent satisfies the requirements of 40 C.F.R. Part 264.143(f).

107. Any and all financial assurance instruments provided pursuant to this Section shall be in form and substance satisfactory to EPA, determined in EPA's sole discretion. In the event that EPA determines at any time that the financial assurances provided pursuant to this Section (including, without limitation, the instrument(s) evidencing such assurances) are inadequate, Respondents shall, within 30 days of receipt of notice of EPA's determination, obtain and present to EPA for approval one of the other forms of financial assurance listed in Paragraph 106, above. In addition, if at any time EPA notifies Respondents that the anticipated cost of completing the Work has increased, then, within 30 days of such notification, Respondents shall obtain and present to EPA for approval a revised form of financial assurance (otherwise acceptable under this Section) that reflects such cost increase. Respondents' inability to demonstrate financial ability to complete the Work shall in no way excuse performance of any activities required under this Agreement.

108. If Respondents seek to ensure completion of the Work through a guarantee pursuant to Subparagraph 106.e. or 106.f. of this Agreement, Respondents shall (i) demonstrate to EPA's satisfaction that the guarantor satisfies the requirements of 40 C.F.R. Part 264.143(f); and (ii) resubmit sworn statements conveying the information required by 40 C.F.R. Part 264.143(f) annually, on the anniversary of the Effective Date, to EPA. For the purposes of this Agreement, wherever 40 C.F.R. Part 264.143(f) references "sum of current closure and post-closure costs estimates and the current plugging and abandonment costs estimates," the current cost estimate of \$1,000,000.00 for the Work at the Site shall be used in relevant financial test calculations.

109. If, after the Effective Date, Respondents can show that the estimated cost to complete the remaining Work has diminished below the amount set forth in Paragraph 106 of this Section, Respondents may, on any anniversary date of the Effective Date, or at any other time agreed to by the Parties, reduce the amount of the financial security provided under this Section to the estimated cost of the remaining Work to be performed. Respondents shall submit a proposal for such reduction to EPA, in accordance with the requirements of this Section, and may reduce the amount of the security after receiving written approval from EPA. In the event of a dispute, Respondents may seek dispute resolution pursuant to Section XV (Dispute Resolution). Respondents may reduce the amount of security in accordance with EPA's written decision resolving the dispute.

110. Respondents may change the form of financial assurance provided under this Section at any time, upon notice to and prior written approval by EPA, provided that EPA determines that the new form of assurance meets the requirements of this Section. In the event of a dispute, Respondents may change the form of the financial assurance only in accordance with the written decision resolving the dispute.

## **XXVII. INTEGRATION/APPENDICES**

111. This Agreement and its appendices and any deliverables, technical memoranda, specifications, schedules, documents, plans, reports (other than progress reports), etc. that will be developed pursuant to this Agreement and become incorporated into and enforceable under this Agreement constitute the final, complete and exclusive agreement and understanding among the Parties with respect to the settlement embodied in this Agreement. The parties acknowledge that there are no representations, agreements or understandings relating to the settlement other than those expressly contained in this Agreement. The following appendices are attached to and incorporated into this Agreement:

“Appendix A” is the SOW.

“Appendix B” is the map of the Site.

## **XXVIII. ADMINISTRATIVE RECORD**

112. EPA will determine the contents of the administrative record file for selection of the remedial action. Respondents shall submit to EPA documents developed during the course of the RI/FFS upon which selection of the response action may be based. Upon request of EPA, Respondents shall provide copies of plans, task memoranda for further action, quality assurance memoranda and audits, raw data, field notes, laboratory analytical reports and other reports. Upon request of EPA, Respondents shall additionally submit any previous studies conducted under state, local or other federal authorities relating to selection of the response action, and all communications between Respondents and state, local or other federal authorities concerning selection of the response action. At EPA's discretion, Respondents shall establish a community information repository at or near the Site, to house one copy of the administrative record.

## **XXIX. EFFECTIVE DATE AND SUBSEQUENT MODIFICATION**

113. This Agreement shall be effective on the date that the Agreement is signed by the Director, Emergency and Remedial Response Division, Region 2, or his delegatee.

114. This Agreement may be amended by mutual agreement of EPA and Respondents. Amendments shall be in writing and shall be effective when signed by EPA. EPA Project Coordinators do not have the authority to sign amendments to the Agreement.

115. No informal advice, guidance, suggestion, or comment by the EPA Project Coordinator or other EPA representatives regarding reports, plans, specifications, schedules, or any other writing submitted by Respondents shall relieve Respondents of their obligation to obtain any formal approval

required by this Agreement, or to comply with all requirements of this Agreement, unless it is formally modified.

### XXX. NOTICE OF COMPLETION OF WORK

116. When EPA determines that all Work has been fully performed in accordance with this Agreement, with the exception of any continuing obligations required by this Agreement, including but not limited to payment of Future Response Costs and record retention, EPA will provide written notice to Respondents. If EPA determines that any such Work has not been completed in accordance with this Agreement, EPA will notify Respondents, provide a list of the deficiencies, and require that Respondents modify the RI/FFS Work Plan if appropriate in order to correct such deficiencies, in accordance with Paragraph 46 (Modification of the Work Plan). Failure by Respondents to implement the approved modified RI/FFS Work Plan shall be a violation of this Agreement.

It is so ORDERED AND AGREED this May 3rd day of May, 2013.

BY: 

Walter Mugdan, Director  
Emergency and Remedial Response Division  
Region 2  
U.S. Environmental Protection Agency

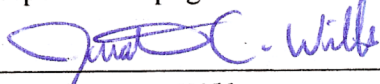
In the matter of Standard Chlorine Chemical Company Superfund Site - CERCLA Docket No. 02-2013-2015

CONSENT

The Respondent identified below has had an opportunity to confer with EPA regarding this Agreement. Respondent hereby consents to the issuance of this Agreement and to its terms. The individuals executing this Agreement on behalf of Respondent certifies under penalty of perjury under the laws of the United States and of the State of Respondent's incorporation that he or she is fully and legally authorized to agree to the terms and conditions of this Agreement and to bind Respondent thereto.

Agreed this 16<sup>th</sup> day of April, 2013.

For Respondent Apogent Transition Corp.

By:   
Jonathan C. Wilk

Title: Assistant Secretary



In the matter of Standard Chlorine Chemical Company Superfund Site - CERCLA Docket No. 02-2013-2015

CONSENT

The Respondent identified below has had an opportunity to confer with EPA regarding this Agreement. Respondent hereby consents to the issuance of this Agreement and to its terms. The individuals executing this Agreement on behalf of Respondent certifies under penalty of perjury under the laws of the United States and of the State of Respondent's incorporation that he or she is fully and legally authorized to agree to the terms and conditions of this Agreement and to bind Respondent thereto.

Agreed this 26<sup>th</sup> day of April, 2013.

For Respondent, Beazer East, Inc.

By: 

Title: President


In the matter of Standard Chlorine Chemical Company Superfund Site - CERCLA Docket No. 02-2013-2015

CONSENT

The Respondent identified below has had an opportunity to confer with EPA regarding this Agreement. Respondent hereby consents to the issuance of this Agreement and to its terms. The individuals executing this Agreement on behalf of Respondent certifies under penalty of perjury under the laws of the United States and of the State of Respondent's incorporation that he or she is fully and legally authorized to agree to the terms and conditions of this Agreement and to bind Respondent thereto.

Agreed this ~~1st~~ day of April, 2013.

For Respondent Cooper Industries, LLC

By:   
Taras Szmagala  
Title: VP-Deputy General Counsel

In the matter of Standard Chlorine Chemical Company Superfund Site - CERCLA Docket No. 02-2013-2015

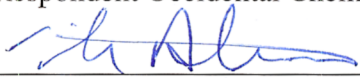
CONSENT

The Respondent identified below has had an opportunity to confer with EPA regarding this Agreement. Respondent hereby consents to the issuance of this Agreement and to its terms. The individuals executing this Agreement on behalf of Respondent certifies under penalty of perjury under the laws of the United States and of the State of Respondent's incorporation that he or she is fully and legally authorized to agree to the terms and conditions of this Agreement and to bind Respondent thereto.

Agreed this 19<sup>TH</sup> day of APRIL, 2013.

For Respondent Occidental Chemical Corporation

By: \_\_\_\_\_



Title: \_\_\_\_\_

VICE President

## APPENDIX A

### STATEMENT OF WORK FOR REMEDIAL INVESTIGATION AND FOCUSED FEASIBILITY STUDY STANDARD CHLORINE CHEMICAL COMPANY SUPERFUND SITE Kearny, Essex County, New Jersey

#### I. INTRODUCTION

A. The purpose of the remedial investigation/focused feasibility study ("RI/FFS") is to investigate the nature and extent of contamination at the Standard Chlorine Chemical Company Superfund Site (the "Site"), and to develop and evaluate potential remedial alternatives that consider the Site conditions at the time the FFS is conducted, all as further provided in this Statement of Work ("SOW"). The RI and FFS are interactive and may be conducted concurrently so that the data collected in the RI influences the development of remedial alternatives in the FFS, which in turn affects the data needs and the scope of treatability studies, if needed.

B. The RI/FFS shall be conducted in a manner that minimizes environmental impacts in accordance with EPA Region 2 Clean and Green Policy (available at [www.epa.gov/region02/superfund/green\\_remediation/policy.html](http://www.epa.gov/region02/superfund/green_remediation/policy.html)) to the extent consistent with the National Contingency Plan (NCP), 40 CFR Part 300. The Respondents shall follow "Data Quality Objectives Process for Hazardous Waste Site Investigations," EPA QA/G-4HW, January 2000, in planning and conducting the RI/FFS.

C. The Respondents shall conduct the RI/FFS and shall produce draft RI and FFS reports that are in accordance with this SOW, the "Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA" (U.S. EPA, Office of Emergency and Remedial Response, October 1988), and any other guidance that EPA uses in conducting a RI/FFS, as appropriate, as well as any additional requirements in the Administrative Settlement Agreement and Order on Consent ("Agreement"). The RI/FS Guidance describes the report format and the required report content. The Respondents shall furnish all necessary personnel, materials, and services needed for, or incidental to, the performance of the RI/FFS, except as otherwise specified in the Agreement.

D. At the completion of the RI/FFS, EPA will be responsible for the selection of the remedy for the Site and will document the remedy selection in a Record of Decision ("ROD"). The remedial action alternative selected by EPA will meet the cleanup standards specified in CERCLA Section 121. That is, the selected remedial action will be protective of human health and the environment, will be in compliance with, or include a waiver of, applicable or relevant and appropriate requirements of other laws ("ARARs"), will be cost-effective, will utilize permanent solutions and alternative treatment technologies or resource recovery technologies, to the maximum extent practicable, and will address the statutory preference for treatment as a principal element. The final RI/FFS report, as adopted by EPA, and the baseline risk assessment

will, with the administrative record, form the basis for the selection of the remedy for the Site and will provide the information necessary to support the development of the ROD. .

E. As specified in CERCLA Section 104(a) (1), EPA will provide oversight of the Respondents' activities throughout the RI/FFS. The Respondents shall support EPA's initiation and conduct of activities related to the implementation of oversight activities.

F. In the event that there is a conflict between this SOW and the Agreement, the provisions of the Agreement govern.

## II. TASK 1 - SITE CHARACTERIZATION SUMMARY REPORT

A. Tierra Solutions, Inc. ("Tierra") on behalf of Respondent Occidental Chemical Corporation ("Occidental"), and Respondents Beazer East, Inc. ("Beazer"), and Cooper Industries, LLC ("Cooper") submitted to EPA a Site Characterization Summary Report ("SCSR") on December 7, 2012. The overall objective of site characterization is to describe areas of the Site that may pose a threat to human health or the environment. The Site physical conditions, including physiography, geology, hydrology, and hydrogeology were described in the SCSR.

B. For the SCSR, existing data for the Site were compiled, reviewed, and summarized. These data include, but are not necessarily limited to: the results of previous Site investigations; historical Site uses and operations; aerial photographs; regional geologic, hydrogeologic, and hydrologic information, surrounding land and water use; and other relevant information. The SCSR includes a preliminary Conceptual Site Model ("CSM") and identified additional data necessary to complete the RI/FFS. The CSM considered the Interim Response Actions and Interim Measures completed to date or currently underway at the Site.

C. On January 8, 2013, Tierra on behalf of Respondent Occidental and Respondents Beazer and Cooper made a presentation to EPA and the State on the findings of the SCSR. By letter dated February 7, 2013, EPA gave a notice to proceed based on the SCSR to Tierra on behalf of Respondent Occidental and Respondents Beazer and Cooper. The EPA-approved SCSR shall ultimately be incorporated into the RI Report.

## III. TASK 2 - RI/FFS WORK PLAN

A. RI/FFS Work Plan and Schedule. Within 60 days after EPA's written authorization to proceed based on the SCSR, or such longer time as specified or agreed to by EPA, the Respondents shall submit to EPA a detailed Work Plan for the completion of the RI/FFS. Available Site-related information (as summarized in the SCSR), including, but not limited to, existing sampling data, information on the historical use of the Site, and other material that reflects the historical waste disposal practices at the Site, will be used for planning the RI/FFS. The SCSR will be incorporated by reference as the basis for the RI/FFS scope of work. The RI/FFS Work Plan shall include, among other things, a detailed schedule for RI/FFS activities at the Site. EPA will either approve the RI/FFS Work Plan pursuant to Section X (EPA Approval

of Plans and Other Submissions) of the Agreement, or will provide written comments on it. The RI/FFS Work Plan scope of work shall supplement existing data and shall satisfy the following general requirements:

1. Define Sources of Contamination

The Respondents shall delineate each source of contamination based on consideration of historical and supplemental RI data. For each such location, the areal extent and depth of contamination shall be determined by sampling at incremental depths on a sampling grid or by other sampling means, as defined in the RI/FFS Work Plan. The physical characteristics and chemical constituents and their concentrations will be determined for all known and discovered sources of contamination. The Respondents shall conduct sufficient sampling to define the boundaries of the contaminant sources to the level established in the Quality Assurance/Quality Control Project Plan ("QAPP").

Defining the source of contamination will include analyzing the potential for contaminant release (e.g., long term leaching from soil), contaminant mobility and persistence, and characteristics important for evaluating remedial actions, including information to assess treatment technologies as well as impacts from other neighboring sites and the urban background site conditions.

2. Describe the Nature and Extent of Contamination

The Respondents shall gather information to characterize the nature and extent of contamination during the RI Field Investigation. To characterize the nature and extent of contamination, the Respondents shall utilize the information on the Site's physical and biological characteristics and sources of contamination. The information on the nature and extent of contamination will be used to conduct site specific human health and ecological risk assessments. The Respondents shall use this information to help to determine aspects of the appropriate remedial action alternatives to be evaluated.

3. Evaluate Site Characteristics

The Respondents shall collect, analyze, and evaluate the data to describe: (1) physical and biological characteristics at the Site, (2) contaminant source characteristics, (3) nature and extent of contamination (4) contaminant fate and transport and (5) develop site-specific human health and ecological risk assessments. Results of the Site's physical characteristics, source characteristics, and extent of contamination analyses are utilized in the analysis of contaminant fate and transport. The evaluation will include the actual and potential magnitude of releases from the sources, and horizontal and vertical spread of contamination as well as mobility and persistence of contaminants. Should numerical groundwater modeling be necessary to satisfy the RI objectives, Respondent may utilize the groundwater modeling previously completed for the Site as part of the Interim Response Action and Interim Measures, subject to EPA approval.

4. Data Management Procedures

The Respondents shall consistently document the quality and validity of field and laboratory data compiled during the RI.

a. Document Field Activities

Information gathered during characterization of the Site will be consistently documented and adequately recorded by the Respondents in field logs and laboratory reports. The method(s) of documentation must be specified in the Work Plan and an associated QAPP. Field logs or dedicated field log-books must be utilized to document observations, measurements, and significant events that have occurred during field activities. Laboratory reports must document sample custody, analytical responsibility, analytical results, adherence to prescribed protocols, nonconformity events, corrective measures, and/or data deficiencies.

b. Maintain Sample Management and Tracking

The Respondents shall maintain field reports, sample shipment records, analytical results, and QA/QC reports to ensure that only validated analytical data are reported and utilized in the risk assessment and evaluation of remedial alternatives. Analytical results developed under the Work Plan must be accompanied by, or cross-referenced to, a corresponding QA/QC report when included in the SCSR for the Site. In addition, the Respondents shall safeguard chain of custody forms and other project records to prevent loss, damage, or alteration of project documentation.

5. Reuse Assessment

At EPA's request, the Respondents shall perform a Reuse Assessment. If EPA determines that a Reuse Assessment is required and so notifies the Respondents, the Respondents shall, within 45 days thereafter or such longer time as specified or agreed to by EPA, submit a Reuse Assessment Report. The Reuse Assessment Report should provide sufficient information to develop realistic assumptions of the reasonably anticipated future uses for the Site. The Respondents shall prepare the Reuse Assessment Report in accordance with EPA guidance including, but not limited to, "Reuse Assessment: A Tool to Implement the Superfund Land Use Directive," OSWER Directive 9355.7-06P, June 4, 2001, or subsequently issued guidance. EPA may provide written comments on the submitted Reuse Assessment Report, in which case the Respondents shall amend and submit to EPA a revised Reuse Assessment Report that is responsive to the directions in all

of EPA's written comments within thirty (30) days after receipt of EPA's written comments.

B. Within 30 days after receiving written comments from EPA on the RI/FFS Work Plan or such longer time as specified or agreed to by EPA, the Respondents shall prepare a revised RI/FFS Work Plan that is responsive to the directions in all of EPA's written comments. The Respondents shall submit the revised RI/FFS Work Plan to EPA for approval pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, unless the Respondents are directed otherwise by EPA in writing. The RI/FFS Work Plan shall include the following:

1. The existing QAPP for the Site shall be updated to address the RI/FFS scope of work and shall be consistent with the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP), Parts 1, 2 and 3, EPA-505-B-04-900A, B and C, March 2005 or newer, and other guidance documents referenced in the aforementioned guidance documents. The UFP documents may be found at: [http://www.epa.gov/fedfac/documents/intergov\\_qual\\_task\\_force.htm](http://www.epa.gov/fedfac/documents/intergov_qual_task_force.htm). In addition, the guidance and procedures located in the EPA Region 2 DESA/HWSB web site: <http://www.epa.gov/region02/qa/documents.htm>, as well as other OSWER directives and EPA Region 2 policies should be followed, as appropriate.
  - a. All sampling, analysis, data assessment, and monitoring shall be performed in accordance with the "Region II CERCLA Quality Assurance Manual," Revision 1, EPA Region 2, dated October 1989, and any updates thereto, or an alternate EPA-approved test method, and the guidelines set forth in the Agreement. All testing methods and procedures shall be fully documented and referenced to established methods or standards.
  - b. The QAPP shall provide for collection of data sufficient to delineate site-related contamination in potentially affected media, to the extent necessary to select an appropriate remedy; to evaluate cross-media contaminant transport (e.g., ground water to surface water or soil to surface water) as necessary to support the assessment of risks associated with potential or actual exposures to site-related contamination under current and reasonably likely future conditions; and to evaluate remedial alternatives that address site-related contamination (for example, sufficient engineering data for the projection of contaminant fate and transport and development and screening of remedial action alternatives, including information to assess treatment technologies).
  - c. The QAPP shall specifically include the following items:
    - i. An explanation of the way(s) the sampling, analysis, testing, and monitoring will produce data for the RI/FFS;



- ii. A detailed description of the sampling, analysis, and testing to be performed, including sampling methods, analytical and testing methods, sampling locations and frequency of sampling;
- iii. A description of how sampling data to be generated following the effective date of this Agreement and a site basemap will be submitted in a manner that is consistent with the Region 2 Electronic Data Deliverable (EDD) format (information available at [www.epa.gov/region02/superfund/medd.htm](http://www.epa.gov/region02/superfund/medd.htm));
- iv. Cultural Resources Survey Work Plan to address the requirements of the National Historic Preservation Act (see CERCLA Compliance with Other Laws Manual: Part II: Clean Air Act and Other Environmental Statutes and State Requirements, OSWER Directive 9234.1-02, August 1989, available at [www.epa.gov/superfund/policy/remedy/pdfs/540g-89009-s.pdf](http://www.epa.gov/superfund/policy/remedy/pdfs/540g-89009-s.pdf) ). The following previously submitted documents are hereby incorporated by reference:

Langan Engineering and Environmental Services, June 2009,  
*Phase IA Cultural Resources Work Plan for the Standard Chlorine Chemical Company Site*;

Langan Engineering and Environmental Services, August 2009,  
*Phase IA Cultural Resource Survey for the Standard Chlorine Chemical Company Site*;

Langan Engineering and Environmental Services, May 2010,  
*Geomorphological Assessment for the Standard Chlorine Chemical Company Site*;

Langan Engineering and Environmental Services, July 2010,  
*Phase IB Archaeological Survey for Slurry Wall Construction Work Plan for the Standard Chlorine Chemical Company Site*;

- v. A map depicting sampling locations (to the extent that these can be defined when the QAPP is prepared); and
- vi. A schedule for performance of the specific tasks in subparagraphs (c)(i)-(iii) of this Section III.B.1.

d. In the event that additional sampling locations, testing, and analyses are required, the Respondents shall submit to EPA a memorandum documenting the

need for additional data to the EPA Project Coordinator within 30 days of identification. EPA in its discretion will determine whether the additional data will be collected by Respondents and whether it will be incorporated into plans, reports and other deliverables.

- e. To provide quality assurance and maintain quality control with respect to all samples to be collected, the Respondents shall ensure the following:
  - i. Quality assurance and chain-of-custody procedures shall be performed in accordance with standard EPA protocol and guidance, including the guidance provided in the EPA Region 2 Quality Assurance Homepage, and the guidelines set forth in the Agreement.
  - ii. Once laboratories have been chosen, each laboratory's quality assurance plan ("LQAP") shall be submitted for review by EPA. In addition, the laboratory shall submit to EPA current copies (within the past six months) of laboratory certification provided from either a State or Federal Agency which conducts certification. The certification shall be applicable to the matrixes and analyses that are to be conducted. If the laboratory does not participate in the Contract Laboratory Program ("CLP"), it must submit to EPA the results of performance evaluation ("PE") samples for the constituents of concern from within the past six months or it must complete PEs for the matrixes and analyses to be conducted and the results must be submitted with the LQAP.

For any analytical work performed, including that done in a fixed laboratory, in a mobile laboratory, or in on-site screening analyses, the Respondents must submit to EPA a "Non-CLP Superfund Analytical Services Tracking System" form for each laboratory utilized during a sampling event, within 30 days after acceptance of the analytical results. Upon completion, such documents shall be submitted to the EPA Project Coordinator, with a copy of the form and transmittal letter to:

Regional Sample Control Center Coordinator  
U.S. EPA Region 2  
Division of Environmental Science & Assessment  
2890 Woodbridge Avenue, Bldg. 209, MS-215  
Edison, NJ 08837

- iii. The laboratories utilized for analyses of samples must perform all analyses according to approved EPA methods.

- iv. Unless indicated otherwise in the approved QAPP, upon receipt from the laboratory, all data shall be validated.
- v. Submission of the validation package (checklist, report and Form I's containing the final data) to EPA, prepared in accordance with the provisions of Subparagraph vi. below as part of the RI Report submittal.
- vi. Assurance that all analytical data that are validated as required by the QAPP are validated according to the latest version of EPA Region 2 data validation Standard Operating Procedures. Region 2 Standard Operating Procedures are available at:  
<http://www.epa.gov/region02/qa/documents.htm>,
- vii. Unless indicated otherwise in the QAPP, the Respondents shall require deliverables equivalent to CLP data packages from the laboratory for analytical data. Upon EPA's request, the Respondents shall submit to EPA the full documentation (including raw data) for these analytical data. EPA reserves the right to perform an independent data validation, data validation check, or qualification check on generated data.
- viii. The Respondents shall insert a provision in their contract(s) with the laboratory utilized for analyses of samples that requires granting access to EPA personnel and authorized representatives of the EPA for the purpose of ensuring the accuracy of laboratory results related to the Site.

- 2. The existing Health and Safety Plan ("HSP") shall be updated to address the RI/FFS scope of work and shall conform to 29 CFR §1910.120, "OSHA Hazardous Waste Operations Standards," and the EPA guidance document, "Standard Operating Safety Guidelines" (OSWER, 1988).

C. Following approval of the RI/FFS Work Plan, or modification pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, the RI/FFS Work Plan shall be deemed to be incorporated into the Agreement by reference.

#### IV. TASK 3 - COMMUNITY RELATIONS

To the extent requested by EPA, the Respondents shall provide information relating to the work required hereunder for EPA's use in developing and implementing a Community Relations Plan. As requested by EPA, the Respondents shall participate in the preparation of appropriate information disseminated to the public, and participate in public meetings, which may be held or sponsored by EPA, to explain activities at or concerning the Site.

## **V. TASK 4 – IMPLEMENTATION OF RI/FFS WORK PLAN**

A. Following EPA's written approval or modification of the RI/FFS Work Plan, pursuant to Section XII of the Agreement, the Respondents shall implement the provisions of the RI/FFS Work Plan to further characterize the Site. The Respondents shall notify EPA at least 14 days in advance of the field work regarding the planned dates for field activities, including ecological field surveys, geophysical surveys, excavation, installation of wells, initiating sampling, installation and calibration of equipment, pump tests, and initiation of analysis and other field investigation activities.

B. The Respondents shall provide EPA with validated analytical data within 90 days after each sampling activity, in the electronic format required by EPA at the time of submission, showing the location, medium and results.

C. Within seven days after completion of field activities, the Respondents shall so advise EPA in writing.

D. Within 45 days after submission to EPA of the final set of validated data, the Respondents shall submit to EPA a SCSR Addendum. Within 30 days after the Respondents' submittal of the SCSR Addendum, or such longer time as specified in writing by EPA, the Respondents shall make a presentation to EPA and the State on the findings of the SCSR Addendum. EPA may then elect to provide comments on the SCSR Addendum, in which case the Respondents shall amend and submit to EPA a revised SCSR Addendum that is responsive to the directions in all of EPA's written comments, within 30 days after receipt of EPA's comments or such longer time as specified or agreed to by EPA. When approved by EPA, the SCSR Addendum shall be incorporated into the RI Report.

E. The Respondents shall provide a monthly progress report and participate in meetings with EPA at major milestones in the RI/FFS process, as described herein at Section II (Task 1 - Site Characterization Summary Report); Section V (Task 4.D - Site Characterization Summary Report Addendum; Section X (Task 9.B, Development and Screening of Remedial Alternatives Technical Memorandum); and Section XI (Task 10.A, Focused Feasibility Study Report). The monthly progress reports shall be submitted to EPA by the 15<sup>th</sup> day of the following month. At a minimum, with respect to the preceding month, these progress reports shall (1) describe the actions which have been taken to comply with this Agreement during that month, (2) include all results of sampling and tests and all other data received by Respondents, (3) describe Work planned for the next two months with schedules relating such Work to the overall project schedule for RI/FFS completion, and (4) describe all problems encountered and any anticipated problems, any actual or anticipated delays, and solutions developed and implemented to address any actual or anticipated problems or delays.

## VI. TASK 5 - IDENTIFICATION OF CANDIDATE TECHNOLOGIES, AS NECESSARY

An Identification of Candidate Technologies Memorandum shall be submitted by the Respondents within 60 days after the Respondents' submission to EPA of the last set of final validated analytical data. The candidate technologies identified shall include innovative treatment technologies (as defined in the RI/FS Guidance) where appropriate. The Identification of Candidate Technologies Memorandum will be prepared in view of the fact that an Engineering Evaluation and Cost Analysis has already been prepared for the Site, and will consider technologies and alternatives if necessary to expand upon, or supplement, the Interim Response Actions and Interim Measures completed to date or currently underway at the Site. EPA may provide written comments on the submitted memorandum, in which case the Respondents shall amend and submit to EPA a revised memorandum which is responsive to the directions in all of EPA's written comments within 21 days after receipt of EPA's written comments.

## VII. TASK 6 - TREATABILITY STUDIES, AS NECESSARY

Treatability testing, consisting of a compatibility study of potential slurry wall materials, groundwater chromium reduction chemistry, groundwater treatment sludge generation rates, and stabilization of lagoon materials have already been completed by the Respondents. Respondents may propose to EPA, and EPA will consider, previously completed treatability studies performed by Respondents or others on similar materials, where applicable. If EPA determines that additional treatability testing is necessary to complete the FFS, then such additional treatability testing will be performed by the Respondents to assist in the detailed analysis of alternatives. If a decision to conduct additional treatability studies is made, the following activities will be performed by the Respondents.

### A. Evaluate Treatability Studies

The Respondents and EPA will decide on the type of treatability testing to use (e.g., bench versus pilot). Because of the time required to design, fabricate, and install pilot scale equipment as well as perform testing for various operating conditions, the decision to perform pilot testing should be made as early in the process as possible to minimize potential delays of the FFS.

### B. Treatability Testing Work Plan

Within 60 days after EPA's written determination that treatability testing is necessary and the decision on the type of treatability testing to be used, the Respondents shall submit a Treatability Testing Work Plan, including a field sampling and analysis plan and a schedule. EPA will either approve of the Treatability Testing Work Plan pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, or will provide written comments on the plan. Within 30 days after receiving EPA's written comments on the Treatability Testing Work Plan, or such longer time as specified or agreed to by

EPA, the Respondents shall prepare a revised plan that is responsive to the directions in all of EPA's written comments. The Respondents shall submit the revised Treatability Testing Work Plan to EPA for approval pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, unless the Respondents are directed otherwise by EPA in writing. Upon its approval by EPA, said Treatability Testing Work Plan and schedule shall be deemed incorporated into this Agreement by reference.

The Treatability Testing Work Plan shall describe the Site history and conditions, remedial technology(ies) to be tested, test objectives, experimental procedures, treatability conditions to be tested, measurements of performance, analytical methods, data management and analysis, health and safety, and residual waste management. The Data Quality Objectives ("DQOs") for treatability testing should be documented as well. If pilot scale treatability testing is to be performed, the pilot-scale Work Plan will describe pilot plant installation and start-up, pilot plant operation and maintenance procedures, operating conditions to be tested, a sampling plan to determine pilot plant performance, and a detailed health and safety plan. If testing is to be performed off-site, the Respondents shall address all necessary permitting requirements to the satisfaction of appropriate authorities.

C. Treatability Testing QAPP

If the original QAPP is not adequate for defining the activities to be performed during the treatability test, a separate Treatability Testing QAPP, or amendment to the original QAPP for the Site, will be prepared by the Respondents for EPA review and approval, and will be submitted at the same time as the Treatability Testing Work Plan.

EPA will either approve of the revised QAPP pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, or will provide written comments on the QAPP. Within 30 days after receiving EPA's written comments on the Treatability Testing QAPP, the Respondents shall prepare a revised QAPP that is responsive to the directions in all of EPA's written comments. The Respondents shall submit the revised Treatability Testing QAPP to EPA for approval pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, unless the Respondents are directed otherwise by EPA in writing.

D. Treatability Testing HSP

If the original HSP is not adequate for defining the activities to be performed during the treatment tests, a separate or amended HSP will be developed by the Respondents and submitted for EPA review and comment. Section III (Task 2 – RI/FS Work Plan) provides additional information on the requirements of the health and safety plan. EPA does not "approve" the treatability testing HSP.

E. Treatability Testing Evaluation Report

Within 60 days after completion of any treatability testing, the Respondents shall submit a Treatability Testing Evaluation Report to EPA. EPA may provide written comments on the report, in which case the Respondents shall amend and submit to EPA a revised Treatability Testing Evaluation Report that is responsive to the directions in all of EPA's written comments, within 30 days after receiving EPA's written comments.

The Treatability Testing Evaluation Report shall analyze and interpret the treatability testing results. Depending on the sequences of activities, this report may be a part of the RI/FFS Report or a separate deliverable. The report will evaluate each technology's effectiveness, implementability, cost and actual results as compared with predicted results. The report will also evaluate full scale application of the technology, including a sensitivity analysis identifying the key parameters affecting full-scale operation.

VIII. TASK 7 - BASELINE RISK ASSESSMENT

The Respondents shall prepare a Baseline Risk Assessment for the Site which shall be incorporated by the Respondents into the RI. The Baseline Risk Assessment will take into consideration the Interim Response Actions and Interim Measures completed to date or currently underway at the Site. The Respondents shall provide EPA with the following deliverables:

A. Baseline Human Health Risk Assessment (BHHRA)

1. Actual and potential cancer risks and non-cancer hazards to human health shall be identified and characterized in accordance with CERCLA, the NCP, and EPA guidance documents including, but not limited to, the RI/FS Guidance, "Land Use in the CERCLA Remedy Selection Process" (OSWER Directive No. 9355.7-04) and the definitions and provisions of "Risk Assessment Guidance for Superfund ("RAGS")," Volume 1, "Human Health Evaluation Manual," (December 1989) (EPA/540/1-89/002). Other EPA guidance documents to be used in the development of risk assessments are identified in Attachment 1 to this SOW.
2. Memorandum on Exposure Scenarios and Assumptions

Within 9) days after approval or modification of the RI/FS Work Plan pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, the Respondents shall submit a Memorandum of Exposure Scenarios and Assumptions ("MESA") describing the exposure scenarios and assumptions for the BHHRA, taking into account the present and reasonably anticipated future land use of the Site based on Site conditions at the time the MESA is prepared, The MESA should include appropriate text describing the CSM and exposure routes of concern for the Site, and include a completed RAGS Part D Table 1. This table shall describe the pathways that will be evaluated in the BHHRA, the rationale for their selection, and a description of those pathways that will not be evaluated. In addition, the MESA shall include a completed RAGS Part D Table 4 describing the exposure pathway parameters with appropriate references to EPA's 1991 Standard Default Assumptions and updated guidance developed by EPA. EPA may provide written comments on the MESA, in which case the Respondents shall amend and submit to EPA a revised MESA that is responsive to the directions in all of EPA's written comments, within 21 days after receiving EPA's written comments or such longer time as specified or agreed to by EPA.

3. Pathway Analysis Report ("PAR")

The Respondents shall prepare and submit a PAR within 60 days after the Respondents' submission to EPA of the last set of validated data. The PAR shall be developed in accordance with OSWER Directive 9285.7-01D dated January 1998 (or more recent version), entitled, *Risk Assessment Guidelines for Superfund Part D* and other appropriate guidance in Attachment 1 and updated thereto. The PAR shall contain the information necessary for a reviewer to understand how the risks at the Site will be assessed. The PAR will build on the MESA (see VII.A.2 above) describing the risk assessment process and how the risk assessment will be prepared. The PAR shall include completed RAGS Part D Tables 2, 3, 5, and 6 as described below. EPA may provide written comments on the PAR, in which case the Respondents shall amend and submit to EPA a revised PAR that is responsive to the directions in all of EPA's written comments within 21) days after receipt of EPA's written comments or such longer time as specified or agreed to by EPA. The PAR must be reviewed and approved by EPA prior to the submission of the draft BHHRA. The following information shall be included in the PAR:

- a. Chemicals of Potential Concern ("COPCs"). The PAR shall contain all the information necessary for a reviewer to understand how the risks at the Site will be evaluated.
  - i. Based on the validated analytical data the Respondents shall list the hazardous substances present in all sampled media (e.g., groundwater, soils, sediment, etc.) and the COPCs as described in RAGS Part A.



- ii. Table 2 - Selection of COPCs. COPCs and associated concentrations in sample media for the PAR shall be determined utilizing all currently available media-specific validated analytical data generated during the RI/FFS. The selection of COPCs shall follow RAGS Part A and before hazardous substances are eliminated as COPCs they shall be evaluated against the residential and industrial screening levels in accordance with the "Regional Screening Levels for Chemical Contaminants at Superfund Sites" screening level/preliminary remediation goal website. ([http://www.epa.gov/reg3hwmd/risk/human/rb-concentration\\_table/index.htm](http://www.epa.gov/reg3hwmd/risk/human/rb-concentration_table/index.htm)). The industrial screening level shall not be used as a basis for eliminating any hazardous substance as a COPC. The COPCs shall be presented in completed RAGS Part Table 2 format.
- b. Table 3 - Media Specific Exposure Point Concentrations. Using the COPCs selected in Table 2, this Table shall summarize the Exposure Point Concentrations for all COPCs for the various media. The calculation of the Exposure Point Concentration shall follow the Supplemental Guidance to RAGS: Calculating the Concentration Term (1992), using EPA's ProUCL 4.0 2007 (or most recent version) Software, which evaluates the distribution of the data using Shapiro-Wilk's and Lilliefors's tests, in accordance with 2003 ProUCL's User's Guide. In those cases where the 95% Upper Confidence Limit ("UCL") exceeds the maximum, the maximum concentration shall be used as the Exposure Point Concentration.
- c. Tables 5 and 6 - Toxicological Information. This section of the PAR shall provide the toxicological data (e.g., Cancer Slope Factors, Reference Doses, Reference Concentrations, Weight of Evidence for Carcinogens, and adjusted dermal toxicological factors where appropriate) for the COPCs. The toxicological data shall be presented in completed RAGS Part D Tables 5 and 6. The sources of data in order of priority are:
- Tier 1 – Integrated Risk Information System ("IRIS") database (EPA, current version).
  - Tier 2 – Provision Peer Reviewed Toxicity Values ("PPRTV") – The Office of Research and Development/National Center for Environmental Assessment/Superfund Health Risk Technical Support Center ("STSC") develops PPRTVs on a chemical specific basis when requested by EPA's Superfund program. Provisional values will either be obtained from the "Regional Screening Levels for Chemical Contaminants at Superfund Sites" or from Region 2.
  - Tier 3 – Other Toxicity Values – Tier 3 includes additional EPA and non-EPA sources of toxicity information. Priority will be

given to those sources of information that are the most current, the basis for which is transparent and publicly available and which have been peer reviewed. Tier 3 values include toxicity values obtained from CalEPA, Agency for Toxic Substances and Disease Registry's ("ATSDR's") Minimum Risk Levels ("MRLs") and toxicity values obtained from the HEAST (EPA 1997 b).

To facilitate a timely completion of the PAR, the Respondents shall submit a list of chemicals for which IRIS values are not available to EPA as soon as identified thus allowing EPA to facilitate obtaining this information from EPA's National Center for Environmental Assessment.

4. Baseline Human Health Risk Assessment Reporting.

Within 75 days after EPA's approval of the PAR, the Respondents shall submit to EPA a Draft BHHRA for inclusion in the RI. The submittal shall include completed RAGS Part D Tables 7 through 10 summarizing the calculated cancer risks and non-cancer hazards and appropriate text in the risk characterization with a discussion of uncertainties and critical assumptions (e.g., background concentrations and conditions). The Respondents shall perform the BHHRA in accordance with the approach and parameters described in the MESA and the PAR, as described above. Text and tables from these reports previously reviewed by EPA shall be included in the appropriate sections of the BHHRA.

EPA may provide written comments on the draft BHHRA, in which case the Respondents shall amend and submit to EPA a revised report that is responsive to the directions in all of EPA's written comments, within 30 days after receiving EPA's written comments or such longer time as specified or agreed to by EPA. Upon approval by EPA, the revised BHHRA shall be incorporated into the RI Report.

B. Baseline Ecological Risk Assessment

1. Within 75 days after the Respondents' submission to EPA of the last set of final validated analytical data, the Respondents shall submit a Screening Level Ecological Risk Assessment ("SLERA") in accordance with current Superfund ecological risk assessment guidance (Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments [ERAGS], USEPA, 1997 [EPA/540-R-97-006], OSWER Directive 9285.7-25, June 1997)). The SLERA shall include a comparison of the maximum contaminant concentrations in each media of concern to appropriate conservative ecotoxicity screening values, and should use conservative exposure estimates. The SLERA shall be based on data representative of potential exposures that may

remain upon completion of the ongoing Interim Response Action. EPA will review the SLERA and determine whether a full Baseline Ecological Assessment is required. EPA may provide written comments on the SLERA, in which case the Respondents shall amend and submit to EPA a revised SLERA that is responsive to the directions in all of EPA's written comments, within 21 days after receiving EPA's written comments or such longer time as specified or agreed to by EPA.

2. If EPA determines that a full Baseline Ecological Risk Assessment ("BERA") is required, and so notifies the Respondents in writing, the Respondents shall, within 75 days thereafter or such longer time as specified or agreed to by EPA, submit a Scope of Work outlining the steps and data necessary to perform the BERA, including any amendments to the RI/FFS Work Plan required to collect additional relevant data. If EPA provides written comments on the BERA Scope of Work, the Respondents shall amend and submit to EPA a revised BERA Scope of Work that is responsive to the directions in all of EPA's written comments within 14 days after receipt of EPA's written comments or such longer time as specified or agreed to by EPA. The BERA Scope of Work shall identify any RI/FFS Work Plan amendments or addenda, including establishment of a schedule for review and approval of additional field work, subject to EPA approval pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement.
3. The Respondents shall notify EPA in writing within seven days after completion of all field activities associated with the BERA, as identified in the BERA Scope of Work and performed under the approved RI/FFS Work Plan addenda. Within 60 days after submission to EPA of the final set of BERA-related validated data, the Respondents shall submit a draft BERA Report to EPA for inclusion in the RI Report. Actual and potential ecological risks shall be identified and characterized in accordance with CERCLA, the NCP, and EPA guidance documents including, but not limited to, "Ecological Risk Assessment Guidance for Superfund, Process for Designing and Conducting Ecological Risk Assessments," (1997) (EPA/540-R-97-006), ERAGS, dated June 5, 1997 (or most recent guidance). The Respondents shall evaluate and assess the risk to the environment posed by Site contaminants. As part of this subtask, the Respondents shall perform the following activities:
  - a. Draft BERA Report. The Respondents shall prepare a draft BERA Report that addresses the following:
    - i. Hazard Identification (sources): The Respondents shall review available information on the hazardous substances present at the Site and identify the major contaminants of concern.

- ii. **Dose-Response Assessment:** The Respondents shall identify and select contaminants of concern based on their intrinsic toxicological properties.
- iii. **Characterization of Site and Potential Receptors:** The Respondents shall identify and characterize environmental exposure pathways.
- iv. **Select Chemicals, Indicator Species, and End Points:** In preparing the assessment, the Respondents shall select representative chemicals, indicator species (species which are especially sensitive to environmental contaminants), and end points on which to concentrate.
- v. **Exposure Assessment:** The exposure assessment shall identify the magnitude of actual or environmental exposures, the frequency and duration of these exposures, and the routes by which receptors are exposed. The exposure assessment shall include an evaluation of the likelihood of such exposures occurring and shall provide the basis for the development of acceptable exposure levels. In developing the exposure assessment, the Respondents shall develop reasonable maximum estimates of exposure for both current land use conditions and potential land use conditions at the site.
- vi. **Toxicity Assessment/Ecological Effects Assessment:** The toxicity and ecological effects assessment shall address the types of adverse environmental effects associated with chemical exposures, the relationships between magnitude of exposures and adverse effects, and the related uncertainties for contaminant toxicity.
- vii. **Risk Characterization:** During risk characterization, chemical-specific toxicity information, combined with quantitative and qualitative information from the exposure assessment, shall be compared to measured levels of contaminant exposure levels and/or the levels predicted through environmental fate and transport modeling. These comparisons shall determine whether concentrations of contaminants at or released from the Site are affecting or could potentially affect the environment.
- viii. **Identification of Limitations/ Uncertainties:** The Respondents shall identify critical assumptions (e.g., background concentrations and conditions) and uncertainties in the report.
- ix. **Conceptual Site Model:** Based on contaminant identification, exposure assessment, toxicity assessment, and risk

characterization, the Respondents shall revise the Preliminary CSM discussed in Section II.B of this SOW, as appropriate.

- b. Final BERA Report: Within 30 days after receiving EPA's written comments on the draft BERA Report, or such longer time as specified or agreed to by EPA, the Respondents shall amend and submit to EPA a final BERA Report that is responsive to the directions in all of EPA's written comments. Upon approval by EPA, the final BERA shall be incorporated into the RI Report.

#### IX. TASK 8 - REMEDIAL INVESTIGATION REPORT

The Respondents shall prepare a RI Report that accurately establishes the site characteristics such as the contaminated media, extent of contamination, and the physical boundaries of the contamination. This report shall summarize results of field activities to characterize the Site, sources of contamination, and the fate and transport of contaminants. Pursuant to this objective, the Respondents shall obtain only the minimum essential amount of detailed data necessary to determine the key contaminants movement and extent of contamination. The key contaminants are selected based on persistence and mobility in the environment and the degree of hazard. The Respondents shall use existing standards and guidelines such as drinking water standards, water quality criteria, and other criteria accepted by EPA as appropriate for the situation, which will be used to evaluate effects on human receptors who may be exposed to the key contaminants above appropriate standards or guidelines. The RI Report will incorporate information presented in the approved SCSR (and addendum if applicable), the BHHRA Report and, if required, the BERA Report.

The RI Report shall be written in accordance with the "Guidance for Conducting Remedial Investigations/Feasibility Studies under CERCLA," OSWER Directive 9355.3-01, October 1988, Interim Final (or latest revision) and "Guidance for Data Usability in Risk Assessment," (EPA/540/G-90/008), September 1990 (or latest revision).

The Respondents shall refer to the RI/FS Guidance, as appropriate, for an outline of the report format and contents. Following written comment by EPA, the Respondents shall prepare a final RI Report which incorporates EPA's written comments, pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement.

##### A. Draft Remedial Investigation Report

Within 75 days after the Respondents' submission of the revised BERA or submission of the BHHRA, whichever is later, the Respondents shall submit a draft RI Report.

**B. Final Remedial Investigation Report**

Within 45 days after receiving EPA's written comments on the Draft RI Report, or such longer time as specified or agreed to by EPA, the Respondents shall amend and submit to EPA a final RI Report that is responsive to the directions in all of EPA's written comments unless the Respondents are directed otherwise by EPA in writing.

**X. TASK 9 - DEVELOPMENT AND SCREENING OF REMEDIAL ALTERNATIVES**

Concurrent with the RI site characterization described in Sections III and V the Respondents shall begin to develop and evaluate remedial action objectives that at a minimum ensure protection of human health and the environment. The development and screening of remedial alternatives shall identify and develop an appropriate range of remedial action objectives consistent with the Site conditions at the time Work is conducted. This range of alternatives should include options in which treatment is used to reduce the toxicity, mobility, or volume of wastes, including, at a minimum, the principal threats posed by the Site, but that vary in the types of treatment, the amount treated, and the manner in which long-term residuals or untreated wastes are managed; options involving containment with little or no treatment; options involving both treatment and containment; and a No-Action alternative. The following activities will be performed as a function of the development and screening of remedial alternatives.

**A. Development and Screening of Remedial Alternatives**

**1. Develop Remedial Action Objectives**

The Respondents shall develop remedial action objectives, which are medium-specific or operable-unit specific goals for protecting human health or the environment that specify the COCs, exposure route(s) and receptor(s) and preliminary remediation goals.

**2. Develop General Response Actions**

The Respondents shall develop general response actions for each medium of interest defining containment, treatment, excavation, pumping, or other actions, singly or in combination to satisfy the remedial action objective.

**3. Identify Areas or Volumes of Media**

The Respondents shall identify areas or volumes of media to which general response actions may apply, taking into account requirements for protectiveness as identified in the remedial action objectives. The chemical and physical characterization of the Site will also be taken into account.

**4. Assemble and Document Alternatives**

The Respondents shall assemble selected representative technologies into alternatives for each affected medium or operable unit.

Together, all of the alternatives will represent a range of treatment and containment combinations that will address either the Site or the operable unit(s) as a whole. A summary of the assembled alternatives and their related action-specific ARARs will be prepared by the Respondents for inclusion in the Development and Screening of Remedial Alternatives Technical Memorandum.

The reasons for eliminating alternatives during the preliminary screening process must be specified.

5. Refine Alternatives

The Respondents shall refine the remedial alternatives to identify contaminant volume addressed by the proposed process and sizing of critical unit operations as necessary. Sufficient information will be collected for an adequate comparison of alternatives. Preliminary Remediation Goals (or Regional Screening Levels) for each chemical in each medium will also be modified as necessary to incorporate any new risk assessment information presented in the baseline risk assessment report. Additionally, action-specific ARARs will be updated as the remedial alternatives are refined.

6. Conduct and Document Screening Evaluation of Each Alternative

The Respondents may perform a final screening process based on short and long term aspects of effectiveness, implementability, and relative cost. Generally, this screening process is only necessary when there are many feasible alternatives available for detailed analysis. If necessary, the screening of alternatives will be conducted to assure that only the alternatives with the most favorable composite evaluation of all factors are retained for further analysis. As appropriate, the screening will preserve the range of treatment and containment alternatives that was initially developed. The range of remaining alternatives will include options that use treatment technologies and permanent solutions to the maximum extent practicable.

B. Development and Screening of Alternatives Deliverables

Within 30 days after EPA's approval of the Baseline Risk Assessment (the latter of the BHRRA or BERA), or within 45 days after EPA's approval of the Respondents' Treatability Testing Evaluation Report (if treatability studies are undertaken), whichever is later, the Respondents shall submit a Development and Screening of Remedial Alternatives Technical Memorandum summarizing the work performed in, and the results of, each task in Section X.A

above, including an alternatives array summary. The Memorandum shall also summarize the reasoning employed in screening, arraying alternatives that remain after screening, and identifying the action-specific ARARs for the alternatives that remain after screening. The Memorandum shall also provide an explanation for choosing any institutional or engineering controls as part of any remedial alternative, and the level of effort that will be required to secure, maintain, and enforce the control. Within 21 days after submission of the Memorandum, the Respondents shall make a presentation to EPA identifying the remedial action objectives and summarizing the development and preliminary screening of remedial alternatives. EPA may elect to comment on the Memorandum. If required by EPA's written comments, the remaining alternatives will be modified by the Respondents to assure that a complete and appropriate range of viable alternatives are identified and considered in the detailed analysis. Unless otherwise specified by EPA, changes made in response to EPA's written comments shall be incorporated in the FFS Report. This deliverable will document the methods, rationale, and results of the alternatives screening process.

### C. Detailed Analysis of Remedial Alternatives

The detailed analysis will be conducted by the Respondents to provide EPA with the information needed to allow for the selection of a remedy for the Site.

#### 1. Detailed Analysis of Alternatives

The Respondents shall conduct a detailed analysis of alternatives which will consist of an analysis of each option against a set of nine evaluation criteria and a comparative analysis of all options using the same evaluation criteria as a basis for comparison.

#### 2. Apply Nine Criteria and Document Analysis

The Respondents shall apply nine evaluation criteria to the assembled remedial alternatives to ensure that the selected remedial alternative will be protective of human health and the environment; will be in compliance with, or include a waiver of, ARARs; will be cost-effective; will utilize permanent solutions and alternative treatment technologies, or resource recovery technologies, to the maximum extent practicable; and will address the statutory preference for treatment as a principal element. The evaluation criteria are: (1) overall protection of human health and the environment; (2) compliance with ARARs; (3) long-term effectiveness and permanence; (4) reduction of toxicity, mobility, or volume; (5) short-term effectiveness; (6) implementability; (7) cost; (8) State (or support agency) acceptance; and (9) community acceptance.

For each alternative, the Respondents shall provide: (1) a description of the alternative that outlines the remedial strategy involved and identifies the key ARARs associated with each alternative, and (2) a discussion of the individual criterion assessment. If the Respondents do not have direct input on criteria (8)



State (or support agency) acceptance and (9) community acceptance, these criteria will be addressed by EPA.

3. Compare Alternatives Against Each Other and Document the Comparison of Alternatives

The Respondents shall perform a comparative analysis between the remedial alternatives. That is, each alternative will be compared against the others using the nine evaluation criteria as a basis of comparison. Identification and selection of the preferred alternative are reserved by EPA. The Respondents shall incorporate the results of the comparative analysis in the FFS Report.

XI. TASK 10 – FOCUSED FEASIBILITY STUDY REPORT

A. The Respondents shall prepare a FFS Report consisting of a detailed analysis of the remedial alternatives (operating in conjunction with the Interim Response Action), in accordance with the NCP as well as the most recent guidance. Within 60 days after EPA's approval of the Development and Screening of Remedial Alternatives Technical Memorandum pursuant to Section XII of the Agreement, or such longer time as specified or agreed to by EPA, the Respondents shall submit to EPA a draft FFS Report which reflects the findings in the approved Baseline Risk Assessment. The Respondents shall refer to the RI/FS Work Plan and the RI/FS Guidance, as appropriate, and this SOW for report content and format. Within 14 days after submission of the draft FFS Report, the Respondents shall make a presentation to EPA and the State at which the Respondents shall summarize the findings of the draft FFS Report and discuss EPA's preliminary comments and concerns, if any, associated with the draft FFS Report. EPA will either approve of the submittal pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, or will provide written comments on the draft FFS Report. Within 30 days after receiving EPA's written comments on the draft FFS Report, the Respondents will submit a revised FFS Report that is responsive to the directions in all of EPA's written comments to EPA for approval pursuant to Section X (EPA Approval of Plans and Other Submissions) of the Agreement, unless the Respondents are directed otherwise by EPA in writing.

B. The FFS report shall:

1. Describe existing remedial measures or responses
2. Summarize Focused Feasibility Study objectives
3. Summarize remedial action objectives
4. Articulate general response actions
5. Identify and screen remedial technologies

6. Describe remedial alternatives
7. Perform detailed analysis of remedial alternatives
8. Present a summary and conclusions

The Respondents' technical feasibility considerations shall include the careful study of any problems that may prevent a remedial alternative from mitigating site problems. Therefore, the site characteristics from the RI must be kept in mind as the technical feasibility of the alternative is studied. Specific items to be addressed are reliability (operation over time), safety, operation and maintenance, ease with which the alternative can be implemented, and time needed for implementation.

## ATTACHMENT A

### REFERENCES FOR CITATION

The following list, although not comprehensive, comprises many of the regulations and guidance documents that apply to the RI/FS process:

The National Hazardous Substance and Oil Pollution Contingency Plan, 40 CFR 300 *et seq.*

"Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA," U.S. EPA, Office of Emergency and Remedial Response, October 1988, OSWER Directive No. 9355.3-01

"Interim Guidance on Potentially Responsible Party Participation in Remedial Investigation and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, Appendix A to OSWER Directive No. 9355.3-01.

"Guidance on Oversight of Potentially Responsible Party Remedial Investigations and Feasibility Studies," U.S. EPA, Office of Waste Programs Enforcement, OSWER Directive No. 9835.3.

"A Compendium of Superfund Field Operations Methods," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, EPA/540/P-87/001a, August 1987, OSWER Directive No. 9355.0-14.

"EPA NEIC Policies and Procedures Manual," May 1978, revised November 1984, EPA-330/9-78-001-R.

"Data Quality Objectives for Remedial Response Activities," U.S. EPA, Office of Emergency and Remedial Response and Office of Waste Programs Enforcement, EPA/540/G-87/003, March 1987, OSWER Directive No. 9335.0-7B.

"Guidelines and Specifications for Preparing Quality Assurance Project Plans," U.S. EPA, Office of Research and Development, Cincinnati, OH, QAMS-004/80, December 29, 1980.

"EPA Requirements for QAPPs for Environmental Data Operations," U.S. EPA, Office of Emergency and Remedial Response, QA/R-5, October 1998.

"Interim Guidelines and Specifications for Quality Assurance Project Plans," U.S. EPA, Office of Emergency and Remedial Response, QAMS-005/80, December 1980.

"Users Guide to the EPA Contract Laboratory," U.S. EPA, Sample Management Office, August 1982.

"CERCLA Compliance with Other Laws Manual," Two Volumes, U.S. EPA, Office of Emergency and Remedial Response, August 1988 (draft), OSWER Directive No. 9234.1-01 and -02.

"Guidance on Remedial Actions for Contaminated Ground Water at Superfund Sites," U.S. EPA, Office of Emergency and Remedial Response, (draft), OSWER Directive No. 9283.1-2.

"Draft Guidance on Superfund Decision Documents," U.S. EPA, Office of Emergency and Remedial Response, March 1988, OSWER Directive No. 9355.-02.

"Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual" (Part A), EPA/540/1-89/002.

"Risk Assessment Guidance for Superfund - Volume I Human Health Evaluation Manual" (Part B), EPA/540/R-92/003.

"Risk Assessment Guidance for Superfund - Volume II Environmental Evaluation Manual," March 1989, EPA/540/1-89/001.

"Guidance for Data Useability in Risk Assessment," October, 1990, EPA/540/G-90/008.

"Performance of Risk Assessments in Remedial Investigation/ Feasibility Studies (RI/FSS) Conducted by Potentially Responsible Parties (PRPs)," August 28, 1990, OSWER Directive No.9835.15.

"Risk Evaluation of Remedial Alternatives" (Part C), December 1991, OSWER Directive 9285.7-01C.

"Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions," April 22, 1991, OSWER Directive No. 9355.0-30.

"Supplemental Guidance to RAGS: Calculating the Concentration Term," May 1992, OSWER Directive 9285.7-081.

"Health and Safety Requirements Employed in Field Activities," U.S. EPA, Office of Emergency and Remedial Response, July 12, 1981, EPA Order No. 1440.2.

OSHA Regulations in 29 CFR 1910.120 (Federal Register 45654, December 19, 1986).

"Interim Guidance on Administrative Records for Selection of CERCLA Response Actions," U.S. EPA, Office of Waste Programs Enforcement, March 1, 1989, OSWER Directive No. 9833.3A.

"Community Relations in Superfund: A Handbook," U.S. EPA, Office of Emergency and Remedial Response, June 1988, OSWER Directive No. 9230.03B.

"Community Relations During Enforcement Activities And Development of the Administrative Record," U.S. EPA, Office of Programs Enforcement, November 1988, OSWER Directive No. 9836.0-1a.

"Considering Reasonably Anticipated Future Land Use and Reducing Barriers to Re-use at EPA-Lead Superfund Remedial Sites," U.S. EPA Office of Superfund Remediation and Technology Innovation, March 17, 2010, OSWER Directive 9355.7-19.

"Reuse Assessment: A Tool to Implement the Superfund Land Use Directive," OSWER Directive 9355.7-06P, June 4, 2001. Available at:  
[www.cluin.org/download/toolkit/thirdednew/reuseassesstool.pdf](http://www.cluin.org/download/toolkit/thirdednew/reuseassesstool.pdf)

"Interim Guidance on Implementing the Superfund Administrative Reform on PRP Oversight," U.S. EPA, Office of Emergency and Remedial Response, May 17, 2000, OSWER Directive No. 9200.0-32P. Available at: [www.epa.gov/superfund/programs/reforms/final01.pdf](http://www.epa.gov/superfund/programs/reforms/final01.pdf)

EPA Region 2 Clean and Green Policy. Available at:  
[www.epa.gov/region02/superfund/green\\_remediation/policy.html](http://www.epa.gov/region02/superfund/green_remediation/policy.html)

National Historic Preservation Act, 16 U.S.C. § 470 et seq.

## **HUMAN HEALTH RISK ASSESSMENT GUIDANCE DOCUMENTS**

### **Superfund Risk Assessment Guidance**

USEPA, 1989, Risk Assessment Guidance for Superfund (RAGS); Volume I Human Health Evaluation Manual Part A. OERR. EPA/540/1-89/002. Available at:  
[www.epa.gov/superfund/programs/risk/ragsa/index.htm](http://www.epa.gov/superfund/programs/risk/ragsa/index.htm)

USEPA, 1990, Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual, (Part B, Development of Risk-Based Preliminary Remediation Goals) OERR, EPA/540/R-92/003. Available at:  
[www.epa.gov/superfund/programs/risk/ragsb/index.htm](http://www.epa.gov/superfund/programs/risk/ragsb/index.htm)

USEPA, 1991. Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual (Part C, Risk Evaluation of Remedial Alternatives), OSWER Directive 9285.7-01C, December 1991. Available at:  
[www.epa.gov/superfund/programs/risk/ragsc/index.htm](http://www.epa.gov/superfund/programs/risk/ragsc/index.htm)

USEPA, 1996. Revised Policy on Performance of Risk Assessments During Remedial Investigation/Feasibility Studies (RI/FS) Conducted by Potentially Responsible Parties, OSWER Directive No. 9340.1-02 mistakenly numbered 9835.15c.

USEPA, 1997. Risk Assessment Guidance for Superfund (RAGS); Volume I, Human Health Evaluation Manual, Part D., OERR, Interim Publication No. 9285.7-01D. Available at: [www.epa.gov/superfund/programs/risk/ragsd/index.htm](http://www.epa.gov/superfund/programs/risk/ragsd/index.htm)

USEPA, 1999. Risk Assessment Guidance for Superfund (RAGS). Volume I, Community Involvement in Superfund Risk Assessments. OSWER 9285.7-01, EPA540-R-98-042, PB-99-96303, March 1999. Available at: [www.epa.gov/superfund/programs/risk/ragsa/c1\\_ra.pdf](http://www.epa.gov/superfund/programs/risk/ragsa/c1_ra.pdf).

### **Exposure Factors**

USEPA, 1991, RAGS Volume I: Human Health Evaluation Manual Supplemental Guidance. Standard Default Exposure Factors. OSWER Directive 9285.6-03. March 25, 1991.

USEPA, 1992. Supplemental Guidance to RAGS: Calculating the Concentration Term. OSWER 9285.7-081. May 1992.

USEPA, 1997. Exposure Factors Handbook - Final, Office of Health and Environmental Assessment, Washington, D.C. Available at: [www.epa.gov/ncea/exposfac.htm](http://www.epa.gov/ncea/exposfac.htm).

### **Dermal Exposure**

USEPA, 1992. Dermal Exposure Assessment: Principles and Applications. OSWER. EPA/600/8-91/011B. January. Available at: [www.epa.gov/ncea/dermal.htm](http://www.epa.gov/ncea/dermal.htm).

USEPA, 1999. Risk Assessment Guidance for Superfund Volume I: Human Health Evaluation Manual: (Part E, Supplemental Guidance for Dermal Risk Assessment) Interim Guidance, OSWER Directive 9285.7-10. Please contact Region II risk assessors to discuss any potential updates to the factors in this guidance.

### **Toxicity and Chemical Specific Guidance**

USEPA, current version. Integrated Risk Information System (IRIS); On-line Service. Available at: [www.epa.gov/iris](http://www.epa.gov/iris).

USEPA, 1993. Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons. EPA/600/R-93/C89. July 1993.

USEPA, 1996. PCBs: Cancer dose-response assessment and application to environmental mixtures. EPA/600/P-96/001A. Available at: [www.epa.gov/ncea/pcbs.html](http://www.epa.gov/ncea/pcbs.html).

USEPA. 1997. Health Effects Assessment Summary Tables (HEAST), FY'97 Update. U. S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. EPA/540-F-97-036. July 1997.

“Regional Screening Levels for Chemical Contaminants at Superfund Sites” screening level/preliminary remediation goal website. Available at: [www.epa.gov/reg3hwm/risk/human/rb-concentration\\_table/index.htm](http://www.epa.gov/reg3hwm/risk/human/rb-concentration_table/index.htm).

### **Risk Characterization Guidance**

USEPA 1995. Memorandum from Carole Browner on Risk Characterization, U.S. EPA, February 22, 1995. Available at: [www.epa.gov/ordntrnt/ORD/spc/2riskchr.html](http://www.epa.gov/ordntrnt/ORD/spc/2riskchr.html).

USEPA, 1995. EPA Risk Characterization Program. Memo from Administrator Carol Browner dated March 21, 1995. Available at: [www.epa.gov/ordntrnt/ORD/spc/2riskchr.html](http://www.epa.gov/ordntrnt/ORD/spc/2riskchr.html).

### **Risk Assessment Guidelines and Policies**

USEPA, 1986. Risk Assessment Guidelines for Mutagenicity Risk Assessment. 51 Federal Register 34006, September 24, 1986.

USEPA, 1986. Risk Assessment Guidelines for Chemical Mixtures 51 Federal Register 34014, September 24, 1986.

USEPA, 1992. Risk Assessment Guidelines for Exposure Assessment. Federal Register. Available at: [www.epa.gov/nceawww1/exposure.htm](http://www.epa.gov/nceawww1/exposure.htm)

USEPA, 1995. Neurotoxicity Cancer Guidelines. Federal Register. 60 FR 52-32-52056, October 4, 1995.

USEPA, 1996. Proposed Guidelines for Carcinogen Risk Assessment. EPA/600/P-92/003C. Available from: [www.epa.gov/ORD/WebPubs/carcinogen/](http://www.epa.gov/ORD/WebPubs/carcinogen/).

USEPA, 1996. Guidelines for Reproductive Toxicity Risk Assessment. EPA/630/R-96/009, September 1996. Available at: [www.epa.gov/ORD/WebPubs/repro/](http://www.epa.gov/ORD/WebPubs/repro/).

USEPA, 1996. Proposed Guidelines for Carcinogen Risk Assessment. EPA/600/P-92/003C, April 1996. Available at: [www.epa.gov/ORD/WebPubs/carcinogen](http://www.epa.gov/ORD/WebPubs/carcinogen).

### **Data Useability and Quality**

USEPA, 1992. Final Guidance on Data Useability in Risk Assessment (Part A), OSWER Directive 9285.7-09A., June 1992. Available at: [www.epa.gov/programs/risk/datause/parta.htm](http://www.epa.gov/programs/risk/datause/parta.htm).

USEPA, 1992. Guidance for Data Useability in Risk Assessment (Part B), OSWER Directive 9285.7-09B, August 1992. Available at: [www.epa.gov/programs/risk/datause/partb.html](http://www.epa.gov/programs/risk/datause/partb.html).

USEPA, 1993. Data Quality Objectives Process for Superfund, Interim Final Guidance. OSWER Publication 93559-01, EPA 540-R-93-071.

## **Air**

USEPA, 1989. Air/Superfund national Technical Guidance Study Services, Volumes I-IV, EPA 450/1-89/001, 002, 003, 004, July 1989.

## **Soil**

USEPA, 1993. Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive #9355.4-12.

USEPA, 1996. Recommendations of the Technical Review Workgroup for Lead for an Interim Approach to Assessing Risks Associated with Adult Exposures to Lead in Soils. Available at: [www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm).

USEPA, 1996. Soil Screening Guidance, Fact Sheet. EPA 540/F-95/041. Available at: [www.epa.gov/superfund/resources/soil/index.htm#fact](http://www.epa.gov/superfund/resources/soil/index.htm#fact).

USEPA, 1996. Soil Screening Guidance: User's Guide. EPA Doc. # 540/R-96/018, July 1996. Available at: [www.epa.gov/superfund/resources/soil/](http://www.epa.gov/superfund/resources/soil/)

USEPA, 1996. Final Soil Screening Guidance, and Associated Appendices. May 17, 1996. Soil Screening Guidance User's Guide, EPA 540/R-96/018. Available at: [www.epa.gov/superfund/resources/soil/](http://www.epa.gov/superfund/resources/soil/)

USEPA, 1996. Soil Screening Guidance: Technical Background Document (TBD). EPA Document Number: EPA/540/R-95/128, July 1996. Available at: [www.epa.gov/superfund/resources/soil/](http://www.epa.gov/superfund/resources/soil/).

## **Lead**

USEPA, 1994. Technical Support Document for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (December 1994) [NTIS #PB94-963505, OSWER #9285.7-22]. Software available at: [www.epa.gov/superfund/programs/lead/prods.html](http://www.epa.gov/superfund/programs/lead/prods.html).

USEPA, 1994. Validation Strategy for The Integrated Exposure Uptake Biokinetic Model for Lead in Children (December 1994). Available at: [www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm).

USEPA, 1994. Guidance Manual for the Integrated Exposure Uptake Biokinetic Model for Lead in Children (February 1994) [NTIS #PB93-963510, OSWER #9285.7-15-1]. Available at: [www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm).

USEPA, 1998. Proposed TSCA §403 Soil Lead Hazard and OSWER's Lead-in-Soils Policy. EPA 540-F-98-061, OSWER 9200.4-29, PB 99-963211. Memorandum from Lynn Goldman and



Tim Fields to Regional Administrators. Available at:  
[www.epa.gov/superfund/programs/lead/prods.htm](http://www.epa.gov/superfund/programs/lead/prods.htm)

USEPA, 1998. Clarification to the 1994 Revised Interim Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities. OSWER Directive 9200.4-27, EPA/540/F-98/030 PB98-963244, OSWER Directive # 9200.4-27P. Memorandum from: Tim Fields to Regional Administrators. Available at: <http://www.epa.gov/superfund/programs/lead/prods.htm>.

### **Risk Management**

USEPA, 1992. National Oil and Hazardous Substances Pollution Contingency Plan (The NCP). OERR, OSWER Publication 9200.2-14, January 1992. USEPA, 1993. Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions, OSWER Directive 9355.0-30.

USEPA, 1993. Guidance for Conducting Non-Time Critical Removal Actions Under CERCLA. OSWER 540-R-93-057, August, 1993.

USEPA, 1996. Revised policy on performance of risk assessments during RI/FS conducted by Potentially Responsible Parties. OSWER Directive No. 9340.1-02.

### **Monte Carlo Analysis**

USEPA, 1997. Policy For Use Of Probabilistic Analysis In Risk Assessment at the U.S. Environmental Protection Agency. Guiding Principles for Monte Carlo Analysis - (EPA Document No. EPA/630/R-97/001, March 1997). Available at:  
[www.epa.gov/ORD/spc/probpol.html](http://www.epa.gov/ORD/spc/probpol.html).

USEPA, 1997. Guiding Principles for Monte Carlo Analysis. EPA/630/R-97/001, March 1997. Available at: [www.epa.gov/ncea/monteabs.html](http://www.epa.gov/ncea/monteabs.html).

### **Children's Health Issues**

USEPA, 1995. New Policy on Evaluating Health Risks to Children. From Administrator Carol Browner to: Assistant Administrators, General Counsel, Inspector General, Associate Administrators and Regional Administrators. October 20, 1995. Available at:  
[www.epa.gov/ORD/spc/memo1020.html](http://www.epa.gov/ORD/spc/memo1020.html)

USEPA, 1995. Policy on Policy on Evaluating Health Risks to Children. Available at:  
[www.epa.gov/ORD/spc/memohlth.html](http://www.epa.gov/ORD/spc/memohlth.html).

### **Additional Guidance**

USEPA, 1997. Special Report on Environmental Endocrine Disruption: An Effects Assessment and Analysis. EPA/630/R-96/012. February, 1997 Available at: [www.epa.gov/ORD/WebPubs/endocrine](http://www.epa.gov/ORD/WebPubs/endocrine)

USEPA, 1997. Cumulative Risk Assessment Guidance-Phase I Planning and Scoping. Memorandum to: Assistant Administrators, General Counsel, Inspector General, Associate Administrators, Regional Administrators and Staff Office Directors, dated July 3, 1997. Available at: <http://www.epa.gov/ORD/spc/cumulrsk.html>.

USEPA, 1997. Guidance on Cumulative Risk Assessment. Part 1. Planning and Scoping. U.S. Environmental Protection Agency, Science Policy Council, July 3, 1997. Available at: [www.epa.gov/ORD/spc/cumrisk2.html](http://www.epa.gov/ORD/spc/cumrisk2.html).

### **Chemical Specific Documents of Interest**

Chemical specific documents for mercury, lead, and perchlorate are available at: [www.epa.gov/nceawww1/healthri.html](http://www.epa.gov/nceawww1/healthri.html).

EPA homepage for human health risk assessment documents: <http://www.epa.gov/superfund/programs/risk/toolthh.htm#GG>.

## **Appendix B**

**Figure 1-1: Site Location Map**



